

JANUARY 2012

# LEDs MAGAZINE®

TECHNOLOGY AND APPLICATIONS OF LIGHT EMITTING DIODES

PennWell®

LEDsmagazine.com

## Products

Ten categories of LEDs, components & fixtures P.3

## Companies

A-Z listing of key suppliers in LED market P.114

# LED Suppliers Directory 2012



Sponsored By:

Better Be Bright.  
[www.seoulsemicon.com](http://www.seoulsemicon.com)  
[www.betterbebright.com](http://www.betterbebright.com)



# VIRIBRIGHT

The bright side of light



### LED Bulbs

- 8W
- 500-650 lm
- Dimmable
- 5W
- 300-360 lm



### Spotlights

- 4.5W
- 200-220 lm
- Dimmable

- Earth Friendly
- Long Lasting
- UL and CE Certifications
- Affordable
- Energy Efficient
- Safe



### PAR 38

- 20W
- 1000-1500 lm
- Dimmable



### T8 LED Tubes

- 600-2200 lm
- 0.6m/0.9m/1.2m/1.5m

**MATRIX**  
LIGHTING

Hong Kong Office:

Rm. 223-231, 2/F., East Wing, TST Centre,  
66 Mody Road, TST East, Kowloon, Hong Kong  
Tel: (0755) 3309 3752 / (852) 2723 2302  
Fax: (852) 2722 1040  
E-mail: lighting@matrix.hk.com

Worldwide Offices:

- Hong Kong
- Frankfurt
- Taipei
- London
- Los Angeles
- Shenzhen



[www.viribright.com](http://www.viribright.com)  
[www.viribright.com.cn](http://www.viribright.com.cn)

SUNON®

Cool Down the Temperature  
Brighten Up your LED Light



P/N : TA003-10003



## SUNON Active Thermal Solution for High Power LED Lighting

Our innovative thermal solutions can help LED luminaire to be  
Brighter, Lighter, Longer Lifespan & More energy efficiency

\*Applications: MR16, A19 bulb, Spot Light and Down Light

| [sunon@email.sunon.com.tw](mailto:sunon@email.sunon.com.tw) | [www.sunon.com](http://www.sunon.com) |

©2012 SUNONWEALTH Electric Machine Industry Co., Ltd.



# LUXEON®



## Light that works

In shops and offices, in tunnels and on roadways, LUXEON works. With unparalleled efficiency, quality of light and reliability, the LUXEON portfolio simplifies your solutions and shortens your development time.

Learn more about how the LUXEON portfolio can help you, visit us at

[www.luxeon.com](http://www.luxeon.com)



# LUXEON®

BY PHILIPS LUMILEDS

PLL/LTWI/12-11

# LEDs MAGAZINE®

ISSUE 48

## suppliers directory 2012

- 7** SECTION 1  
*LED Packages & Chips*
- 19** SECTION 2  
*LED Arrays, Light Engines & Modules*
- 31** SECTION 3  
*Optics, Packaging & Thermal Management*
- 43** SECTION 4  
*Test & Measurement*
- 47** SECTION 5  
*Drivers, Control & Connectors*
- 61** SECTION 6  
*Chip Design & Manufacturing*
- 63** SECTION 7  
*Distributors*
- 65** SECTION 8  
*LED Lighting*
- 99** SECTION 9  
*LED Displays & Signs*
- 107** SECTION 10  
*Other Applications*
- 114** COMPANY DIRECTORY  
*An A-Z listing of company information. Visit our website ([www.ledsmagazine.com/buyers](http://www.ledsmagazine.com/buyers)) for further details of all companies listed.*
- 140** PRODUCT INDEX



- SENIOR VICE PRESIDENT & PUBLISHING DIRECTOR** Christine Shaw  
cshaw@pennwell.com
- EDITOR** Tim Whitaker  
twhitaker@pennwell.com
- ASSOCIATE EDITOR** Nicole Pelletier  
nicolep@pennwell.com
- SENIOR TECHNICAL EDITOR** Maury Wright  
maurywright@gmail.com
- SENIOR TECHNICAL EDITOR** Laura Peters  
laurap@pennwell.com
- MARKETING MANAGER** Luba Hrynyk
- PRESENTATION MANAGER** Kelli Mylchreest
- PRODUCTION DIRECTOR** Mari Rodriguez
- SENIOR ILLUSTRATOR** Christopher Hipp
- AUDIENCE DEVELOPMENT** Debbie Bouley
- BUYERS GUIDE DIRECTOR, BUYER'S GUIDES** Sue McAdam
- BUYER'S GUIDES OPERATIONS MANAGER** Jessica Ross
- PRODUCTION/DATABASE SPECIALIST** Lisa Hollis
- DATABASE PRODUCTION SUPERVISOR** Tammy Croft
- CUSTOMER SERVICE SPECIALIST** Sandy Taylor
- CUSTOMER SERVICE SPECIALIST** Linda Smith-Quinn
- CUSTOMER SERVICE SPECIALIST** Christine Algie



**EDITORIAL OFFICES** PennWell Corporation, LEDs Magazine  
Corporate Offices  
98 Spit Brook Road, LL-1  
Nashua, NH 03062-5737  
Tel: +1 603 891-0123  
Fax: +1 603 891-0574  
[www.ledsmagazine.com](http://www.ledsmagazine.com)

- SALES OFFICES**
- SALES MANAGER (US EAST COAST)** Mary Donnelly  
maryd@pennwell.com  
Tel: +1 603 891 9398
- SALES MANAGER (US WEST COAST)** Allison O'Connor  
allison@jagmediasales.com  
Tel: +1 480 991 9109
- SALES MANAGER (EUROPE)** Joanna Hook  
joannah@pennwell.com  
Tel: +44 (0) 7534 856 101
- SALES MANAGER (JAPAN)** Masaki Mori  
mori-masaki@cs-inc.co.jp  
Tel: +81 3 3219 3641
- SALES MANAGER (CHINA & HONG KONG)** Mark Mak  
markm@actintl.com.hk  
Tel: +852 2838 6298
- SALES MANAGER (TAIWAN)** Diane Wel  
diane@arco.com.tw  
Tel: 886-2-2396-5128 ext:270
- SALES MANAGER (KOREA)** Young Baek  
ymedia@chol.com  
Tel: +82 2 2273 4818

- CORPORATE OFFICERS**
- CHAIRMAN** Frank T. Lauinger
- PRESIDENT AND CEO** Robert F. Biolchini
- CHIEF FINANCIAL OFFICER** Mark C. Wilmoth
- TECHNOLOGY GROUP**
- SENIOR VICE PRESIDENT & PUBLISHING DIRECTOR** Christine A. Shaw
- SENIOR VP OF AUDIENCE DEVELOPMENT** Gloria S. Adams

**SUBSCRIPTIONS:** For subscription inquiries:  
Tel: +1 847 559-7330;  
Fax: +1 847 291-4816;  
e-mail: [led@omeda.com](mailto:led@omeda.com);  
[ledsmagazine.com/subscribe](http://ledsmagazine.com/subscribe)

We make portions of our subscriber list available to carefully screened companies that offer products and services that may be important for your work. If you do not want to receive those offers and/or information via direct mail, please let us know by contacting us at List Services LEDs, 98 Spit Brook Road LL-1, Nashua, NH 03062.

Copyright © 2012 PennWell Corp (ISSN 2156-633X). All rights reserved. Contents of this publication may not be reproduced in any form without prior written consent of Publishers.



**Cover**  
Image supplied by Seoul Semiconductor

**NOTICE**

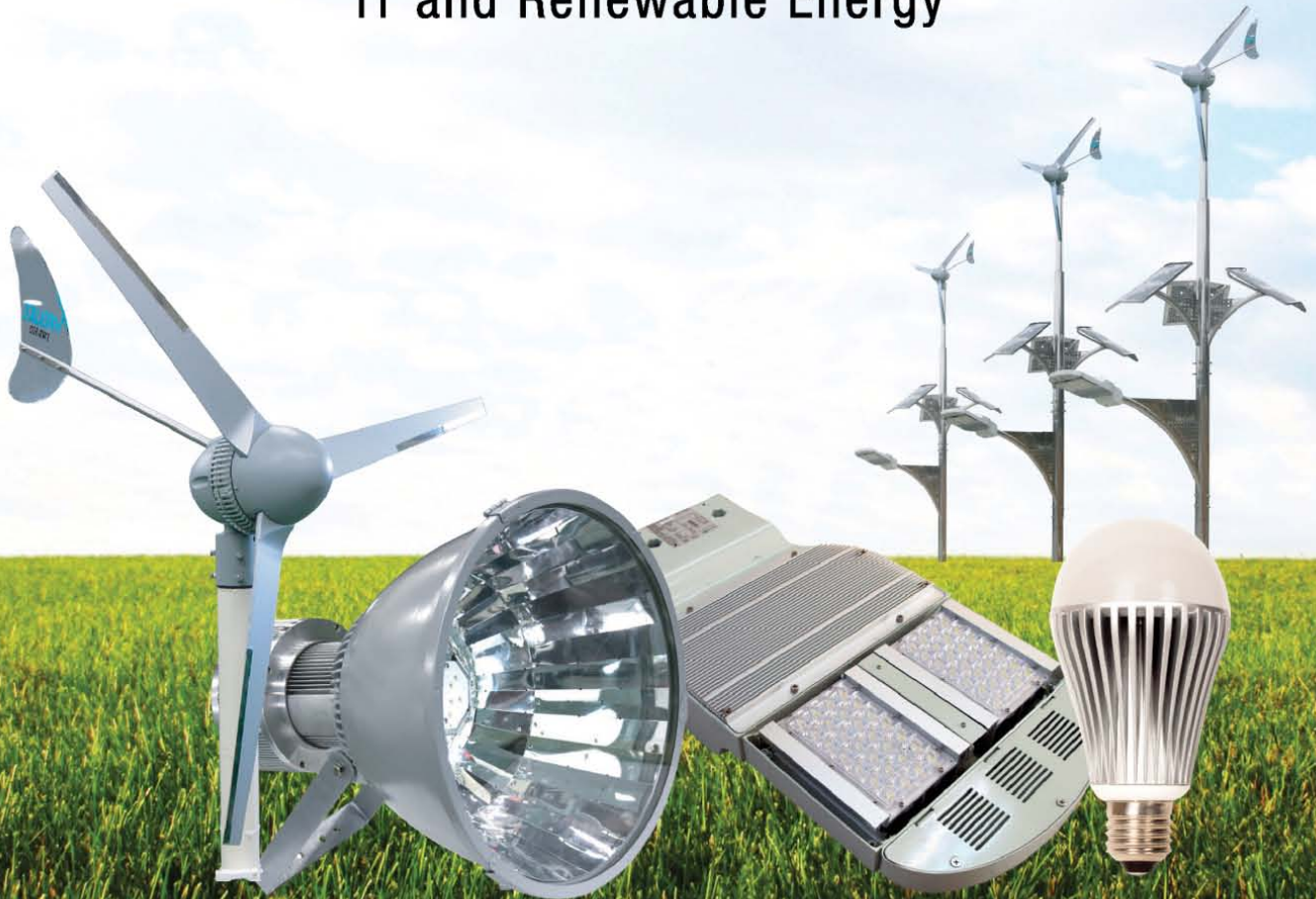
The information in this Directory is based on information supplied by individual companies via our online Buyers Guide at [www.ledsmagazine.com/buyers](http://www.ledsmagazine.com/buyers). Every effort has been made to ensure that the information is accurate, however LEDs Magazine is not responsible for failure of companies to update their information prior to the deadline.

**DISCLAIMER OF WARRANTIES**

Neither LEDs Magazine nor PennWell Corp (1) make any warranties, express or implied, with regard to the contents of this work, including without limitations any warranties of merchantability and fitness for purpose, (2) shall be liable for any direct, indirect, special, incidental, or consequential damages relating to the use of this publication, (3) express any opinion or make any warrant whatsoever regarding any products, services, companies or presentations referred to herein, and (4) assume any responsibility for errors or omissions contained herein nor for uses of any materials contained herein or any decisions based upon such use.



# YUYANG DNU is opening the Smart & Ubiquitous era of 21C through convergence among Digital Display, LED Solution IT and Renewable Energy



[www.yuyang.co.kr](http://www.yuyang.co.kr)  
[sales@yuyang.co.kr](mailto:sales@yuyang.co.kr)  
TEL:+82-31-350-7464  
488-1 Yuram-ri, Paltan-myeon, Hwaseong-si, Gyeonggi-do, Korea



**YUYANG DNU**



**Minimising the glare and optimising the efficiency of the LED luminaries at the same time is one of the barriers for LED lighting manufacturers.**

**Ledlink** recently launched a series of "Hybrid Optics" which combines the secondary and the reflector in one part to maximise the output but minimise the glare, and moreover it looked similar to the traditional halogen lamp.



**Hybrid Optics Series**

- MR16-FIN Type**  
FWHM24  
LL01CR-ACZxxL  
CREE/XML-AWT  
XML-EZW  
EDISON/Federal FM White

- MR16-PPS**  
FWHM24  
LL01ED-ACZxxL  
CREE/XML-AWT  
XML-EZW  
EDISON/Federal FM White

- MR16-PAR 20**  
FWHM24, 38, 55  
LL01CR-ABGxxL  
CREE/MTG  
NICHIA/283

- MR16-PAR20**  
FWHM24, 38  
LL01ED-ABYxxL  
CREE/MTG  
XML-AWT/XML-EZW  
EDISON/Federal FM White  
NICHIA/283

- PAR 38**  
FWHM24, 38  
LL01ED-ASAxxL  
CITIZEN/CL233/CL330  
CREE/CXA 2011  
EDISON/Edipower II

- PAR30**  
FWHM24, 38  
LL01ED-ABXxxL  
CREE/MTG  
XML-AWT/XML-EZW  
EDISON/Edipower II (4W~10W)



15F, No.655, Bannan Rd., Chung-Ho Dist, New Taipei City, Taiwan.  
Tel: +886-2-8227-6126 Fax: +886-2-8227-6127  
ledsmagazine@ledlink-optics.com [www.ledlink-optics.com](http://www.ledlink-optics.com)





Green lighting technologies



Tesla AC LEDs - Fast, Easy & Reliable!

Lynk Labs, INC. (847) 783-0123



## Tesla AC-LED Packages



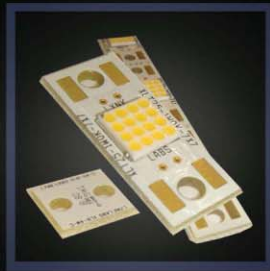
Tesla AC LED packages deliver Lynk Labs' patented AC LED technology in a family of packages that reduce cost, accelerate design time and are fully dimmable with little or no drive electronics. Simplify the complexities of powering LED lamps, assemblies and lighting systems with AC LEDs.



**TESLA**  
AC LED Packages



**GEOLITE**  
AC Lamps & Modules



**SnapBrite**  
AC LED Assemblies

[www.LynkLabs.com](http://www.LynkLabs.com)



# section 1

# LEDs MAGAZINE

## LED PACKAGES & CHIPS

Section sponsor:



### LED PACKAGES

#### AC LEDS

**Aeon Lighting Technology Inc**  
■ See ad on page 27

**American Bright Optoelectronics Corp**  
■ See ad on page 17

Atlanta Light Bulbs  
Digi-Key Corp

**Edison Opto Corp**  
■ See ad on page 21

ESPprosearch

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Hangzhou Titus Digital Technology Co Ltd

**HELIO Optoelectronics Corp**

Lanzarote LED  
Liteon France

**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd

**ProLight Opto Technology Corp**  
[www.prolightopto.com](http://www.prolightopto.com)

**Seoul Semiconductor**  
■ See ad on front cover

Taiwan Oasis Technology Co Ltd  
UPEC Electronics Corp  
Wall Industries Inc  
YEG Opto

**YUYANG DNU Co Ltd**  
■ See ad on page 4

#### FIBER-COUPLED LEDS

Edge Electronics Inc

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Impact Lighting Inc  
LEDtronics Inc

Multiwave Corp  
Optotek Ltd  
PerkinElmer Inc  
WT&T Inc

#### POWER LEDS - COLORED

Allied Electronics

**American Bright Optoelectronics Corp**  
■ See ad on page 17

AP Technologies Ltd  
Arrow Electronics EMEA  
Avago Technologies  
ChromeLED Corp

**Cree Inc**  
■ See ad on back cover

Digi-Key Corp  
Edge Electronics Inc

**Edison Opto Corp**  
■ See ad on page 21

element 14  
Enertrail Technology Co Ltd

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp

section 1 | LED PACKAGES & CHIPS

SPONSOR | **LYNK LABS**



**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62



**SEOUL SEMICONDUCTOR**  
Seoul Semiconductor  
■ See ad on front cover



**EVERLIGHT**  
Everlight Electronics Co Ltd  
■ See ad on page 11



**HELIO Optoelectronics Corp**

Shenzhen Jiuzhou Optoelectronics  
Taiwan Oasis Technology Co Ltd  
Three Five Compounds Inc  
UPEC Electronics Corp

EXALOS  
Excelitas Technologies Corp

International Light  
Kaour LED Co Ltd  
KME  
LED-Depot  
LEDSupply  
LG Innotek  
Ligitek Electronics Co Ltd  
Liteon France  
Marktech Optoelectronics  
Neo-Neon LED Lighting International Ltd



**USHIO America**



**Farnell**

VAOPTO  
**POWER LEDS - COOL WHITE**  
Allied Electronics




**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62



**NU HORIZONS**  
ELECTRONICS  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15



**AMERICAN BRIGHT**  
OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

Goldeneye Inc  
Hangzhou Titus Digital Technology Co Ltd



**OSRAM**  
Opto Semiconductors

**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67



**Cree Inc**  
■ See ad on back cover



**HELIO Optoelectronics Corp**

Pacer International  
PerkinElmer Inc

Arrow Electronics EMEA  
CAO Group Inc

Dicrom Electronica SL  
Digi-Key Corp  
Direct Trade Supplies  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc

High Power Lighting Corp  
International Light  
Kaour LED Co Ltd  
Kingbright Electronic Europe GmbH  
KME  
LEDSupply  
LEDtronics Inc  
Lextar Electronics Corp  
LG Innotek  
Light Engines LLC  
Ligitek Electronics Co Ltd  
Lily Lighting Ltd  
Liteon France



**LUXE N**  
never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2



**EDISON**

**Edison Opto Corp**  
■ See ad on page 21



**LUMICHIP**  
CREATING LIGHT

**Lumichip Ltd**



**ProLight Opto**  
[www.prolightopto.com](http://www.prolightopto.com)

**ProLight Opto Technology Corp**

Enertrail Technology Co Ltd

Neo-Neon LED Lighting International Ltd  
Nichia America Corp

Promus Co Ltd  
SECOL  
Selectronic

SPONSOR | **LYNK LABS**

section 1 | LED PACKAGES & CHIPS

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

**OSRAM**  
Opto Semiconductors

**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

Parker Chomerics  
PerkinElmer Inc

**LUXE N**  
never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

**ProLight Opto**  
www.prolightopto.com

**ProLight Opto Technology Corp**

Promus Co Ltd  
ROHM Semiconductor USA LLC  
SECOL  
Selectronic

**SEOUL**

**SEOUL SEMICONDUCTOR**  
Seoul Semiconductor  
■ See ad on front cover

**SHARP**

**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Shenzhen Refond Optoelectronics Co Ltd  
Stanley Electric Co Ltd  
Taiwan Oasis Technology Co Ltd

**TOSHIBA**  
Leading Innovation >>>

**Toshiba Electronics Europe**  
■ See ad on page 64

UBLEDs Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Yireh Infotech Pvt Ltd

**YUYANG DNU Co Ltd**  
■ See ad on page 4

**POWER LEDS - NEUTRAL WHITE**  
Allied Electronics

**AMERICAN BRIGHT OPTOELECTRONICS CORP.**

**American Bright Optoelectronics Corp**  
■ See ad on page 17

American Opto Plus LED Corp  
Arrow Electronics EMEA  
CAO Group Inc  
CoolLED Ltd

**CREE**

**Cree Inc**  
■ See ad on back cover

Digi-Key Corp  
Direct Trade Supplies  
Edge Electronics Inc

**EDISON**

**Edison Opto Corp**  
■ See ad on page 21

element 14  
epiLED  
ESPprosearch

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp

**FUTURE Lighting Solutions**  
Making LED Lighting Solutions Simple™

**Future Lighting Solutions**  
■ See ad on page 62

Goldeneye Inc  
Hangzhou Titus Digital Technology Co Ltd

**HELIO**

**HELIO Optoelectronics Corp**

International Light  
KME  
Lextar Electronics Corp  
LG Innotek  
Light Engines LLC  
Ligitek Electronics Co Ltd  
Liteon France

**LUMICHIP**  
CREATING LIGHT

**Lumichip Ltd**

Neo-Neon LED Lighting International Ltd

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

**OSRAM**  
Opto Semiconductors

**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

PerkinElmer Inc

**LUXE N**  
never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

SECOL  
Selectronic

section 1 | LED PACKAGES & CHIPS

SPONSOR | 



**SEoul SEMICONDUCTOR**  
Seoul Semiconductor  
■ See ad on front cover



**Cree Inc**  
■ See ad on back cover

Lily Lighting Ltd  
Liteon France



**Lumichip Ltd**



**Sharp Microelectronics Europe**  
■ See ad on page 87

DG Lighting Technology Co Ltd  
Digi-Key Corp  
Direct Trade Supplies  
Edge Electronics Inc

Mimaki ECO Lighting Solutions  
NEON-EC Ltd  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp



**Edison Opto Corp**  
■ See ad on page 21



**Nu Horizons Electronics**  
■ See ad on page 15

Shenzhen Jiuzhou Optoelectronics  
Stanley Electric Co Ltd  
Taiwan Oasis Technology Co Ltd



**Toshiba Electronics Europe**  
■ See ad on page 64



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Optogan GmbH  
Optogan Group

UPEC Electronics Corp  
VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4



**Farnell**




**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

Parker Chomerics  
PerkinElmer Inc

**POWER LEDS - WARM WHITE**  
3DZ Ltd  
Allied Electronics



**Future Lighting Solutions**  
■ See ad on page 62



**Philips Lumileds Lighting**  
■ See ad on page 2



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Goldeneye Inc  
Hana Vision  
Hangzhou Titus Digital Technology Co Ltd

Promus Co Ltd  
SECOL  
Selectronic

American Opto Plus LED Corp



**Arrow Electronics Inc**



**HELIO Optoelectronics Corp**



**Seoul Semiconductor**  
■ See ad on front cover

Arrow Electronics EMEA

Illinois LED Products Inc  
International Light  
KME  
LED-Depot  
LED Engin Inc  
Lextar Electronics Corp  
LG Innotek  
Ligitek Electronics Co Ltd



**Sharp Microelectronics Europe**  
■ See ad on page 87

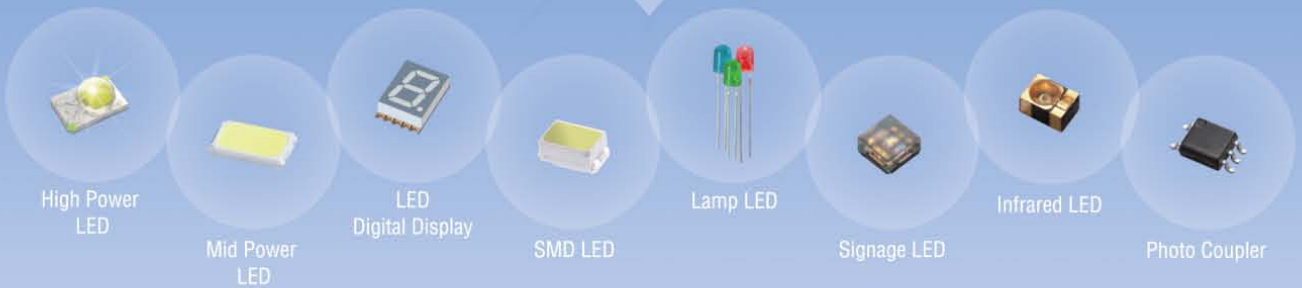
# EVERLIGHT 2012

## The Right LED for the Right Application

As a leading opto-electronics solution provider, EVERLIGHT supplies a diverse product portfolio consisting of High Power LEDs, Lamps, SMD LEDs, LED Lighting Modules, Digital Displays, Optocouplers and Infrared Components for various applications. Our products are not only globally highly competitive but also fully comply with the highest international quality, safety and environmental standards. EVERLIGHT, is forever your trustful & reliable partner of light.

For further information please enter

[www.everlight.com](http://www.everlight.com)



■ RETROFIT AND LIFE STYLE



■ STREET LIGHTING



■ COMMERCIAL LIGHTING



■ HOME LIGHTING

section 1 | LED PACKAGES & CHIPS

SPONSOR | 

Shenzhen Jiuzhou Optoelectronics  
Shenzhen Refond Optoelectronics Co Ltd  
Taiwan Oasis Technology Co Ltd  
Three Five Compounds Inc  
T-Opto, Toyota Tsusho America

**TOSHIBA**  
Leading Innovation >>>

Toshiba Electronics Europe  
■ See ad on page 64


UPEC Electronics Corp  
VAOPTO  
YEG Opto



**YUYANG DNU Co Ltd**  
■ See ad on page 4

**RGB PACKAGES**

3DZ Ltd  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

American Opto Plus LED Corp  
Arrow Electronics EMEA  
Bitro Group Inc  
Digi-Key Corp  
Dominant Opto Technologies  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc



**Edison Opto Corp**  
■ See ad on page 21



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Excellence Opto Inc  
Goldeneye Inc



**HELIO Optoelectronics Corp**

High Power Lighting Corp  
Kingbright Electronic Europe GmbH  
Lanzarote LED  
LED Engin Inc  
LEDtronics Inc  
Lenoo Electronics Co Ltd  
LG Innotek  
Ligitek Electronics Co Ltd  
Liteon France  
LonTin Industry Co Ltd  
LumiCe Co Ltd  
Mimaki ECO Lighting Solutions  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp



**Nu Horizons Electronics**  
■ See ad on page 15



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67



**ProLight Opto Technology Corp**

PerkinElmer Inc  
ROHM Semiconductor USA LLC  
SAYCO  
SECOL



**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Shenzhen Refond Optoelectronics Co Ltd  
Taiwan Oasis Technology Co Ltd  
Three Five Compounds Inc



**Toshiba Electronics Europe**  
■ See ad on page 64

UBLeds Co Ltd  
UPEC Electronics Corp  
VAOPTO

**SIDE-VIEW LEDs**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Digi-Key Corp  
Dominant Opto Technologies  
Edge Electronics Inc



**Everlight Electronics Co Ltd**  
■ See ad on page 11

International Light  
Lenoo Electronics Co Ltd  
Lextar Electronics Corp  
LG Innotek  
Ligitek Electronics Co Ltd  
Liteon France  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp



**Nu Horizons Electronics**  
■ See ad on page 15

OSA Opto Light GmbH



**Philips Lumileds Lighting**  
■ See ad on page 2

SPONSOR | **LYNK LABS**

section 1 | LED PACKAGES & CHIPS

Selectronic




**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Taiwan Oasis Technology Co Ltd  
Twin Hill Co Ltd  
UBLeds Co Ltd  
VAOPTO  
Wellypower Optronics Co

**SURFACE-MOUNT LEDs (<0.5 W)**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Arrow Electronics EMEA  
Avago Technologies  
Clandell Ltd  
Dicrom Electronica SL  
Digi-Key Corp  
Dominant Opto Technologies  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc



**Edison Opto Corp**  
■ See ad on page 21

epiLED



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Excellence Opto Inc  
High Power Lighting Corp  
Illinois LED Products Inc  
International Light  
Kaour LED Co Ltd  
Kingbright Electronic Europe GmbH  
LEDtronics Inc

Lenoo Electronics Co Ltd  
Lextar Electronics Corp  
LG Innotek  
Ligitek Electronics Co Ltd  
Liteon France  
Lumex  
Marktech Optoelectronics  
NEON-EC Ltd  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp



**Nu Horizons Electronics**  
■ See ad on page 15



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

PerkinElmer Inc  
Phenoptix Ltd



**ProLight Opto Technology Corp**

ROHM Semiconductor USA LLC  
Sander Electronics  
SAYCO  
SECOL  
Senslite Corp



**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Shenzhen Refond Optoelectronics Co Ltd  
SunLED Corp  
Taiwan Oasis Technology Co Ltd




**Toshiba Electronics Europe**  
■ See ad on page 64

UBLeds Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Yireh Infotech Pvt Ltd

**THROUGH-HOLE LEDs**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Arrow Electronics EMEA  
Avago Technologies  
Dicrom Electronica SL  
Digi-Key Corp  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc  
EFFLED



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Guang Li-Light Power Technology  
International Light  
Joe Simiriglio JR t/a Frontier LED Products  
Kingbright Electronic Europe GmbH  
LEDSupply  
LEDtronics Inc  
Lenoo Electronics Co Ltd  
Ligitek Electronics Co Ltd  
Liteon France  
Lumex  
Luminlite  
Marktech Optoelectronics  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp




**Nu Horizons Electronics**  
■ See ad on page 15

section 1 | LED PACKAGES & CHIPS

SPONSOR | 



**OPTO DIODE CORP.**  
Opto Diode Corp



**AMERICAN BRIGHT OPTOELECTRONICS CORP.**  
American Bright Optoelectronics Corp  
■ See ad on page 17



**OPTO DIODE CORP.**  
Opto Diode Corp

**OSRAM**  
Opto Semiconductors  
OSRAM Opto Semiconductors GmbH  
■ See ad on page 67

AP Technologies Ltd  
Arrow Electronics EMEA  
Brite-LED Optoelectronics Inc  
Digi-Key Corp  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc

**OSRAM**  
Opto Semiconductors  
OSRAM Opto Semiconductors GmbH  
■ See ad on page 67

Phenoptix Ltd  
**LUXEON**  
never before possible  
Philips Lumileds Lighting  
■ See ad on page 2



**Edison Opto Corp**  
■ See ad on page 21

Pacer International  
PerkinElmer Inc

ROHM Semiconductor USA LLC  
Sander Electronics  
SAYCO

EPIGAP Optronic GmbH



*ProLight Opto*  
[www.prolightopto.com](http://www.prolightopto.com)  
ProLight Opto Technology Corp



**SEOUL SEMICONDUCTOR**  
Seoul Semiconductor  
■ See ad on front cover

**EVERLIGHT**  
Everlight Electronics Co Ltd  
■ See ad on page 11

SECOL  
SemiLEDs  
**TOSHIBA**  
Leading Innovation >>>  
Toshiba Electronics Europe  
■ See ad on page 64

Shenzhen Jiuzhou Optoelectronics  
SunLED Corp

Excelitas Technologies Corp  
The Fox Group Inc  
FUTURELED GmbH

**TOSHIBA**  
Leading Innovation >>>  
Toshiba Electronics Europe  
■ See ad on page 64




**HELIO Optoelectronics Corp**

UPEC Electronics Corp  
VAOPTO  
**WHITE LEDS (<0.5 W)**  
Allied Electronics

UPEC Electronics Corp  
VAOPTO  
**UV AND IR LEDS**  
Allied Electronics

High Power Lighting Corp  
Illinois LED Products Inc  
International Light  
Kingbright Electronic Europe GmbH  
LED Engin Inc  
LEDtronics Inc  
Lenoo Electronics Co Ltd  
Ligitek Electronics Co Ltd  
Liteon France  
Marktech Optoelectronics  
Nichia America Corp



**AMERICAN BRIGHT OPTOELECTRONICS CORP.**  
American Bright Optoelectronics Corp  
■ See ad on page 17



**Alpha-One Electronics Ltd**

**NU HORIZONS ELECTRONICS**  
An Arrow Company  
Nu Horizons Electronics  
■ See ad on page 15

Arrow Electronics EMEA  
Digi-Key Corp  
Direct Trade Supplies  
Dominant Opto Technologies  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc



**Edison Opto Corp**  
■ See ad on page 21



# Samsung + LED Lighting + Nu Horizons = Innovative Lighting Solutions



**SAMSUNG LED**

Samsung is committed to leading the LED lighting revolution, and Nu Horizons is committed to delivering the right solution to meet your LED project needs.



Mid-power white LEDs



High-power white LEDs



High-voltage white AC LEDs



High-voltage white DC LEDs



Light Engines and Modules



LED Tube

Let Nu Horizons be your design and manufacturing solution partner for your lighting needs. Learn more at [www.nuhorizons.com/ledlighting](http://www.nuhorizons.com/ledlighting) or scan the QR code below with your smart phone.



Design ■ Custom LED ■ Assembly

**LED Lighting Solutions**  
from

**NU HORIZONS**  
**ELECTRONICS**  
An Arrow Company

Supporting LED solutions suppliers available from Nu Horizons



section 1 | LED PACKAGES & CHIPS

SPONSOR | **LYNK LABS**

Enerlighting USA  
e3 (Ethos Ethical Energy)



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Hangzhou Titus Digital Technology Co Ltd  
High Power Lighting Corp  
Illinois LED Products Inc  
International Light  
LEDtronics Inc  
Lenoo Electronics Co Ltd  
Lextar Electronics Corp  
LG Innotek  
Liteon France  
Luminlite  
Marktech Optoelectronics  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp



**Nu Horizons Electronics**  
■ See ad on page 15

Optogan GmbH



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

PerkinElmer Inc  
Phenoptix Ltd  
ROHM Semiconductor USA LLC  
Sander Electronics  
SAYCO  
SECOL  
Selectronic



**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Shenzhen Refond Optoelectronics Co Ltd  
SunLED Corp



**Toshiba Electronics Europe**  
■ See ad on page 64

Tridonic  
UPEC Electronics Corp  
VAOPTO  
Yireh Infotech Pvt Ltd

**LED CHIPS**

**AlGaInP RED, ORANGE, YELLOW LED CHIPS**

Allied Electronics  
CS Bright Corp  
Digi-Key Corp  
Dora Texas Corp  
**EBV Elektronik**  
■ See ad on page 101  
Epistar Corp  
E Wave Corp  
Haiku Tech Inc  
Lily Lighting Ltd  
Luminus Devices  
Opto Tech Corp



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67




**Philips Lumileds Lighting**  
■ See ad on page 2

SAYCO  
Sperger Handels GmbH  
Three Five Compounds Inc

**INFRARED LED CHIPS**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

CS Bright Corp  
Digi-Key Corp  
Dora Texas Corp  
**EBV Elektronik**  
■ See ad on page 101  
EPIGAP Optronic GmbH  
epiLED  
Epistar Corp  
E Wave Corp  
Hamamatsu Corp  
JENOPTIK Polymer Systems GmbH  
Lily Lighting Ltd



**Optocore Ltd**

Opto Tech Corp



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

Palomar Technologies Inc



**Plasma-Therm**  
■ See ad on page 60

Sperger Handels GmbH


**NITRIDE (InGaN) BLUE, GREEN LED CHIPS**

Allied Electronics  
CS Bright Corp  
Digi-Key Corp  
**EBV Elektronik**  
■ See ad on page 101  
epiLED

**SPONSOR | LYNK LABS**

**section 1 | LED PACKAGES & CHIPS**

Epistar Corp  
E Wave Corp  
Haiku Tech Inc  
LG Innotek  
Lily Lighting Ltd  
Luminus Devices  
Neo-Neon LED Lighting International Ltd  
Optogan GmbH  
Optogan Group




**Plasma-Therm**  
■ See ad on page 60

Dora Texas Corp  
EPIGAP Optronic GmbH  
epiLED  
Epistar Corp  
The Fox Group Inc  
Nitride Crystals Inc



**Plasma-Therm**  
■ See ad on page 60

SemiLEDs




**OSRAM**  
Opto Semiconductors  
OSRAM Opto Semiconductors GmbH  
■ See ad on page 67



**SHARP**  
Sharp Microelectronics Europe  
■ See ad on page 87

SemiLEDs  
Shenzhen Chippower Technology Co Ltd

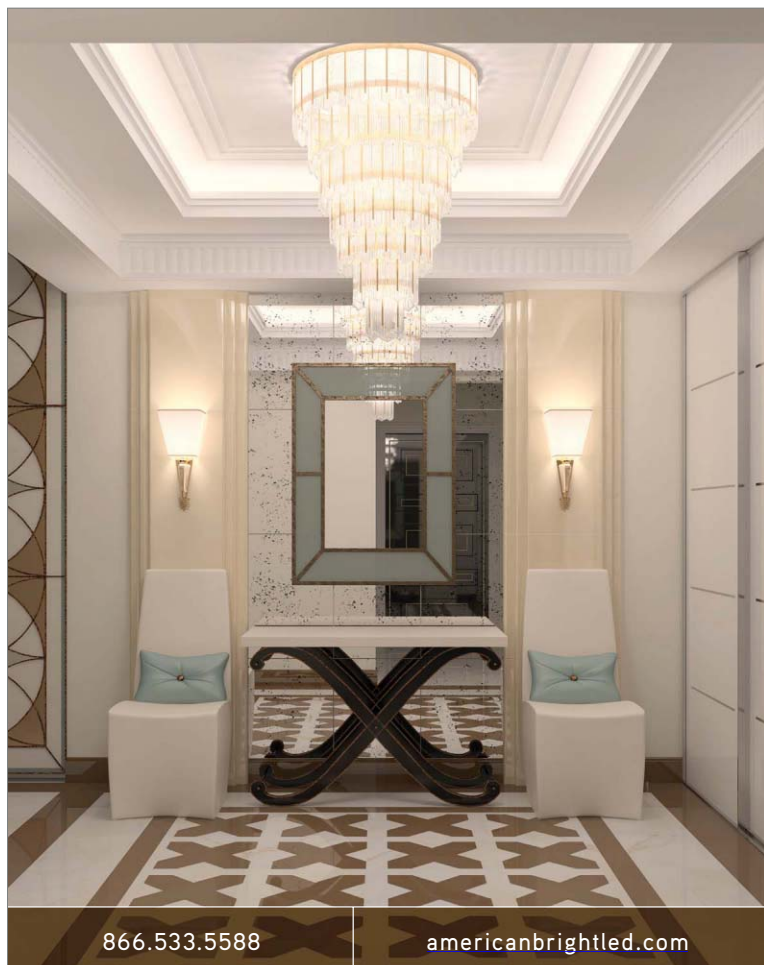


**LUXE N**  
never before possible  
Philips Lumileds Lighting  
■ See ad on page 2

Shenzhen Chippower Technology Co Ltd  
Twin Hill Co Ltd

**UV LED CHIPS**

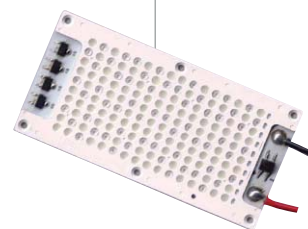
Allied Electronics  
CS Bright Corp  
Digi-Key Corp



866.533.5588

americanbrightled.com

**Brilliant Solution.**



**AC Argus Light Engine**

Available in a variety of shapes and wattages, Argus Light Engines are the ideal source for OEM general lighting applications.

- Direct 120VAC connection
- Advanced Chip on Board Technology
- High Luminous Efficacy
- RoHS Compliant

**AMERICAN BRIGHT**  
OPTOELECTRONICS CORP.



See it all.

Not 1 but **0**-100% dimming.



- Best-in-class smooth, flicker-free TRIAC/ELV dimming
- Industry's only UL Listed, easy-to-install, Plug-n-Play LED driver
- Innovation and patented technology built into each driver

Contact us at:

USA : (770) 538-0630

All Others: +852 2423 3332 in Hong Kong

email: [sales@grealpha.com](mailto:sales@grealpha.com)

website: [www.grealpha.com](http://www.grealpha.com)

# SECTION 2

# LEDs MAGAZINE

## LED ARRAYS, LIGHT ENGINES & MODULES

### CHIP-ON-BOARD (COB) ARRAYS




**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics




**Alpha-One Electronics Ltd**



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
Coolux Electro-optics Co Ltd  
Digi-Key Corp  
D-LED Illumination Technologies  
E Wave Corp  
Excelitas Technologies Corp



**Farnell**

FUTURELED GmbH



**HELIO Optoelectronics Corp**



**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41



**Innovations in Optics Inc**

LEDtronics Inc  
Lextar Electronics Corp  
LG Innotek  
Light Ocean Technology Corp



**Lumichip Ltd**

Luminus Devices  
LuxInTec SL



**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd  
Norlux



**Optocore Ltd**



**OPTO DIODE CORP.**  
Opto Diode Corp

Optogan Group  
Optotek Ltd  
PerkinElmer Inc



**ProLight Opto**  
[www.prolightopto.com](http://www.prolightopto.com)  
**ProLight Opto Technology Corp**

ProPhotonix Ltd  
Selectronic  
Senslite Corp



**SEOUL SEMICONDUCTOR**  
**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87



**SinkPAD Corp**

Spark LED Lighting (HK) Co Ltd  
Sperger Handels GmbH  
Taiwan Oasis Technology Co Ltd  
Tridonic  
UPEC Electronics Corp

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

VAOPTO  
Wellypower Optronics Co

**CONTRACT MANUFACTURING FOR LED ASSEMBLIES**

100 West Electronics



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17



**American Illumination Inc**

BH Design Plus  
Brite-LED Optoelectronics Inc



**CEZOS**

Challenge Electronics Ltd  
CooLED Ltd  
Coolux Electro-optics Co Ltd  
CS Bright Corp  
CYRON Lighting  
D-LED Illumination Technologies  
Dongguan Jingliang Lighting Factory



**Edison Opto Corp**  
■ See ad on page 21

Eneltec Group



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp



**Fusion Optix**  
■ See ad on page 32

**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Guang Li-Light Power Technology



**Heatron Inc**

Hokuriku Malaysia Sdn Bnd  
Hybrid Integrated Circuits Ltd (HIC)  
JD Greentech-Global Inc  
Jireh Optoelectronics



**LEDdynamics Inc**

LedScene sa  
LED Specialists Inc  
LG Innotek



**Lumichip Ltd**

LuxInTec SL  
Marian Inc  
Marktech Optoelectronics  
Neo-Neon LED Lighting International Ltd  
Norlux  
Optotek Ltd  
Palomar Technologies Inc  
PerkinElmer Inc



**Proto Labs Inc**  
■ See ad on page 37

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Saniltech Co Ltd  
SchahlLED Lighting  
Selectronic  
Shenzhen Jiuzhou Optoelectronics

**Signcomplex Ltd**  
■ See ad on page 75  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd  
Taiwan Oasis Technology Co Ltd  
Tepcomp Oy  
Thermal Solution Resources LLC



**Thomas Research Products**  
■ See ad on page 51

TT electronics Optoelectronic Business Unit  
UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Vigilant Technology Co Ltd  
Wilson Process Systems  
YEG Oпто  
YYZ Systems Inc

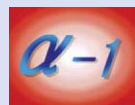
**CUSTOM MODULES & PROTOTYPING**

100 West Electronics



**Aeon Lighting Technology Inc**  
■ See ad on page 27

All Brite International Co Ltd  
Alliance Optotek Corp  
Allied Electronics



**Alpha-One Electronics Ltd**

Aluwave AB



**American Bright Optoelectronics Corp**  
■ See ad on page 17



**American Illumination Inc**

AP Technologies Ltd



# LDMS

Lighting Design Manufacturing Service

Design

Manufacture

Support

**T.E.M.O.**



Thermal Management



Electrical Driving Condition



Mechanical Refinement

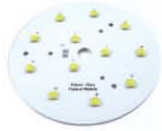


Optical Optimization



L1

Emitter



L2

PCB



L3

Optical



L4

Heatsink



L5

Circuit



L6

Solution

Our unique service program " LDMS " is an integrated service plan that provides LED lighting design, LED manufacture and technical support throughout all the stages of your product developing process.

From level 1 to level 6, from LED emitters to plug-in products, our experienced teams are capable of providing a tailored service plan for customers especially on the four key elements in LED lighting which have been identified as T.E.M.O. (Thermal Management, Electrical Driving Conditions, Mechanical Refinement and Optical Optimization).

## Our Complete Product Line



**Edison Opto Corporation**

{ 4F, No.800, Chung-Cheng Rd., Chung-Ho Dist., New Taipei City, Taiwan 23586  
T+ 886 2 82276996 F+ 886 2 82276997 service@edison-opto.com.tw

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES



**ARROW ELECTRONICS**

**Arrow Electronics Inc**

Bachur & Associates  
Bare Development Inc  
BH Design Plus  
Boca Flasher  
Brite-LED Optoelectronics Inc



**FUTURE**  
Lighting Solutions

**Future Lighting Solutions**  
■ See ad on page 62

Greenlight Optics LLC  
Haeusermann GmbH



**NU HORIZONS ELECTRONICS**

**Nu Horizons Electronics**  
■ See ad on page 15

opsira GmbH



**CEZOS**

Challenge Electronics Ltd  
CODE Lighting SA  
Coolux Electro-optics Co Ltd  
CS Bright Corp  
Diana Electronic-Systeme GmbH  
DigitaLicht AG  
D-LED Illumination Technologies  
Dominio LED



**Heatron Inc**

HEICO lighting  
Hokuriku Malaysia Sdn Bnd  
Hybrid Integrated Circuits Ltd (HIC)  
Illumination Optics Inc  
Impact Lighting Inc  
JD Greentech-Global Inc  
JENOPTIK Polymer Systems GmbH  
Kingbright Corp  
LeddarTech



**Opto Diode Corp**

Optotek Ltd  
OSA Opto Light GmbH  
Palomar Technologies Inc  
PerkinElmer Inc  
Permlight Products Inc



**Edison Opto Corp**  
■ See ad on page 21



**LEDdynamics Inc**

LEDs N Solar  
LED Transformations LLC  
Lextar Electronics Corp  
LG Innotek  
Light Ocean Technology Corp



never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

Phoster Industries  
Products with Passion



your product | our drive

**eldoLED BV**

ELMA Electronic Inc



**Lumichip Ltd**

LuxInTec SL



Real Parts. Really Fast.™

**Proto Labs Inc**  
■ See ad on page 37

Quasar Light Co Ltd  
Reach Technology Inc  
Sagittario Lighting SLU  
Selectronic



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Fa GK Technik



**SEOUL SEMICONDUCTOR**

**Seoul Semiconductor**  
■ See ad on front cover

Shenzhen Jiuzhou Optoelectronics  
**Signcomplex Ltd**  
■ See ad on page 75  
Solid State LED Lighting  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd  
Strataplex Inc  
Taiwan Oasis Technology Co Ltd  
Tepcomp Oy



**Lynk Labs Inc**  
■ See ad on page 6

MAZeT GmbH  
Mimaki ECO Lighting Solutions  
Neo-Neon LED Lighting International Ltd  
Nooteboom Elektronica  
Norlux



**Fusion Optix**  
■ See ad on page 32



section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

**Thomas Research Products**  
*Innovative & Energy Saving Lighting Controls*

**Thomas Research Products**  
■ See ad on page 51

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

Tridonic  
TT electronics Optoelectronic Business Unit  
UPEC Electronics Corp  
VAOPTO  
Vexica Technology Ltd  
WT&T Inc  
YEG OPTO

**Fusion Optix**

**Fusion Optix**  
■ See ad on page 32

OEC AG  
OPTILED Lighting  
Optotek Ltd

**YUYANG DNU Co Ltd**  
■ See ad on page 4

GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Haeusermann GmbH

**ORB optronix**

**Orb Optronix Inc**  
■ See ad on page 35

**DESIGN & INTEGRATION SERVICES**

All Brite International Co Ltd

**HEATRON**

**Heatron Inc**

Phoster Industries  
Products with Passion  
Rayconn Electronics Co Ltd  
Sagitario Lighting SLU  
**Signcomplex Ltd**  
■ See ad on page 75  
Tepcomp Oy  
Thermal Solution Resources LLC

**AMERICAN BRIGHT OPTOELECTRONICS CORP.**

**American Bright Optoelectronics Corp**  
■ See ad on page 17

Hybrid Integrated Circuits Ltd (HIC)  
Innox Pte Ltd  
Innotec  
InteLED Corp  
IR-TEC International Ltd  
IVUS Energy Innovations  
JD Greentech-Global Inc  
LeddarTech  
LED One (Hangzhou) Co Ltd  
Lextar Electronics Corp  
LG Innotek  
Light Ocean Technology Corp

**Thomas Research Products**  
*Innovative & Energy Saving Lighting Controls*

**Thomas Research Products**  
■ See ad on page 51

**ARROW ELECTRONICS**

**Arrow Electronics Inc**

AT&S AG  
BH Design Plus

**Lumotech**

**Lumotech**  
■ See ad on page 48

**UL**

**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

**CEZOS**

**CEZOS**

LuxInTec SL  
Luxon Sp zoo

UPEC Electronics Corp  
VAOPTO  
Vexica Technology Ltd  
West Bank Engineering Consultancy Ltd  
Wilbrecht Ledco Inc  
Zydoled

Challenge Electronics Ltd  
ChiHua Lighting Technology Co Ltd  
CODE Lighting SA  
Coolux Electro-optics Co Ltd  
Eco Marketing  
ELMA Electronic Inc

**LYNK LABS**

**Lynk Labs Inc**  
■ See ad on page 6

**LIGHT ENGINES**

Allied Electronics  
Aluwave AB

Marktech Optoelectronics  
MAZeT GmbH  
Neo-Neon LED Lighting International Ltd  
Nooteboom Elektronica  
Norlux

**AMERICAN BRIGHT OPTOELECTRONICS CORP.**

**American Bright Optoelectronics Corp**  
■ See ad on page 17

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

**AMERICAN ILLUMINATION INC.**

**American Illumination Inc**

BAG Electronics GmbH  
BH Design Plus  
Carmanah Technologies Corp

**CEZOS**

**CEZOS**

Continental Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
Edgelit Acrylics LLC

**EDISON**

**Edison Opto Corp**  
■ See ad on page 21

element 14  
Eneltec Group  
Enerlighting USA  
ESPprosearch  
Excelitas Technologies Corp

**Farnell**

**Farnell**

Foxsemicon Integrated Technology Inc

**Fusion Optix**

**Fusion Optix**  
■ See ad on page 32

**FUTURE Lighting Solutions**  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62

Graham Associates Inc

**GRE Alpha Electronics Ltd**  
■ See ad on page 18

**HEATRON**

**Heatron Inc**

HEICO lighting  
Hokuriku Malaysia Sdn Bnd  
Illumination Optics Inc  
Impact Lighting Inc  
Innotec

**INNOVATIONS IN OPTICS**

**Innovations in Optics Inc**

ION Light Engines  
JENOPTIK Polymer Systems GmbH  
Joe Simiriglio JR t/a Frontier LED Products

**LEDdynamics™**  
*what a bright idea*

**LEDdynamics Inc**

LEDIKO  
LED Optical Solutions  
LEDtronics Inc  
Lextar Electronics Corp  
LG Innotek

**GE Lighting LIGHTLED™**

**Lightech Electronics**

Light Ocean Technology Corp

**LUMICHIP**  
CREATING LIGHT

**Lumichip Ltd**

**Lumotech®**

**Lumotech**  
■ See ad on page 48

LuxInTec SL

**LYNK LABS**

**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
NIOptech  
Norlux

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

Optogan Group

**SYLVANIA**

**OSRAM SYLVANIA**  
■ See ad on page 97

PerkinElmer Inc  
Permlight Products Inc  
Permlight for Signs

**LUXE N™**  
never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

Phoster Industries  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
SchahLED Lighting  
SCHOTT North America Inc  
Selectronic

**SHARP**

**Sharp Microelectronics Europe**  
■ See ad on page 87

SoundOff Signal  
Stanley Electric Co Ltd (UK)  
TerraLUX Inc

section 2 | **LED ARRAYS, LIGHT ENGINES & MODULES**

**Thomas Research Products**  
*Innovative & Energy Saving Lighting Controls*

**Thomas Research Products**  
■ See ad on page 51

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32


UPEC Electronics Corp  
Vexica Technology Ltd  
Xicato Inc  
YEG Opto

**MODULES FOR DECORATIVE LIGHTING**

Allied Electronics



**Future Lighting Solutions**  
■ See ad on page 62



**American Bright Optoelectronics Corp**  
■ See ad on page 17

GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18



**Heatron Inc**

**AMERICAN ILLUMINATION INC.**


**American Illumination Inc**

Arrow Electronics EMEA  
ATG Electronics Corp  
Barthelme LED Solutions  
Beta Opto Technology Co Ltd

Hybrid Integrated Circuits Ltd (HIC)  
Impact Lighting Inc  
ION Light Engines  
Joe Simiriglio JR t/a Frontier LED Products  
LED-Depot  
LEDs N Solar  
LG Innotek  
Lumi Lime Ltd  
LuxInTec SL

**CEZOS**

**CEZOS**



**Lynk Labs Inc**  
■ See ad on page 6

Challenge Electronics Ltd  
Coolux Electro-optics Co Ltd  
Denggang Lighting Technology Co Ltd  
Digi-Key Corp  
DigitaLicht AG  
Edgelit Acrylics LLC  
eldoLED America Inc

Neo-Neon LED Lighting International Ltd  
Nootboom Elektronica

**eldoLED**  
your product | our drive

**eldoLED BV**

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

**Shin-Etsu**



**The Choice is Clear... Shin-Etsu Silicones**

Shin-Etsu Silicones is focused on HB LEDs and expanding its premium silicone solutions to meet the increasing material demands of the industry. Recent silicone innovations include:

**Highly Transparent Encapsulants:**  
SCR-1012 / SCR-1016 / KER-2500 / KER-2600

**Durable Die Bond Adhesives:**  
KER-3000-M2 / KER-3100-U2 / KER-3200-T1

**Thermally Conductive, Double-Sided Tape:**  
TC-20SAS

Contact us to learn more about these and many other superior silicone materials for HB LEDs.  
**The choice is clear.**

**Shin-Etsu**

**Shin-Etsu Silicones of America, Inc.**  
1150 Damar Drive, Akron, OH 44305 USA  
PH: 330.630.9860  
Email: LED@shinetsusilicones.com  
[www.shinetsusilicones.com](http://www.shinetsusilicones.com)

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

OPTILED Lighting  
Opto Tech Corp  
Oree Advanced Illumination Ltd  
Orient Lighting Co Ltd  
Permlight Products Inc



never before possible  
**Philips Lumileds Lighting**  
■ See ad on page 2



**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayonn Electronics Co Ltd  
Sagitario Lighting SLU



**Sharp Microelectronics Europe**  
■ See ad on page 87


Shenzhen Hongxing Lighting Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
Tecartex Digital Solutions SL  
Traxon Technologies Ltd  
UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Xicato Inc

**MODULES FOR GENERAL LIGHTING**  
Advanced Thermal Devices Inc



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Alliance Optotek Corp  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17



**American Illumination Inc**

Arrow Electronics EMEA  
ATG Electronics Corp  
BAG Electronics GmbH  
Bare Development Inc  
BH Design Plus



**CEZOS**

Challenge Electronics Ltd  
Coolux Electro-optics Co Ltd  
Cool-View  
CS Bright Corp  
Digi-Key Corp  
Digitalicht AG  
D-LED Illumination Technologies



**Ecomaa Lighting Inc**




**eldoLED BV**  
your product | our drive

element 14  
Enerlighting USA  
Enertrail Technology Co Ltd  
ERG Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fa GK Technik



**Farnell**

Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32



**Future Lighting Solutions**  
Making LED Lighting Solutions Simple™  
■ See ad on page 62

GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18



**Heatron Inc**



**HELIO Optoelectronics Corp**



**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Innotec  
International Light  
ION Light Engines  
JENOPTIK Polymer Systems GmbH  
Joe Simiriglio JR t/a Frontier LED Products  
[LEDcentre.uk.com](http://LEDcentre.uk.com)  
LED Engin Inc



**LED Linear GmbH**  
linear lighting solutions  
■ See ad on page 69

LED One (Hangzhou) Co Ltd  
LEDs N Solar  
LED Specialists Inc  
Lextar Electronics Corp  
LG Innotek  
Light Ocean Technology Corp

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

**LUMICHIP**  
CREATING LIGHT

**Lumichip Ltd**

Luminus Devices  
LuxInTec SL  
Luxon Sp zoo

**LYNK LABS**

**Lynk Labs Inc**  
■ See ad on page 6

NEON-EC Ltd  
Neo-Neon LED Lighting International Ltd  
NIOptech  
Nooteboom Elektronica  
Norlux

**NU HORIZONS**  
**ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

Onstate Technologies LED Lighting  
OPTILED Lighting  
Opto Tech Corp  
Oree Advanced Illumination Ltd

**SYLVANIA**

**OSRAM SYLVANIA**  
■ See ad on page 97

Permlight Products Inc

**LUXE N**

never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

**PROLED**<sup>®</sup>

**PROLED - MBN GmbH**  
■ See ad on page 72

**ProLight Opto**  
[www.prolightopto.com](http://www.prolightopto.com)

**ProLight Opto Technology Corp**



ALTLed case studies © Singapore

**The Finest Art of Future Illumination Technology**

Consolidated with award-winning design and cutting-edge LED technology, ALT offers premium quality indoor & outdoor high power LED lighting products to lead the lighting market toward the new era.

**New Development**

|  |   |   |   |   |
|--|---|---|---|---|
|  |  |  |  |  |
| <b>Asteria series</b><br>V6 MR16   | <b>Asteria series</b><br>A55 Bulb   | <b>Orion series</b><br>LED T8 Tube<br>5 Feet  | <b>Asteria series</b><br>Grow Light<br>G19 Globe                                    | <b>Metis series</b><br>AR111<br>Chandelier Light                                    |













**ALT** Aeon Lighting Technology Inc.

Requests / Inquiries : [altpr@aeonlighting.com](mailto:altpr@aeonlighting.com)  
<http://www.aeonlighting.com>  
TEL : +886-2-82261289 FAX : +886-2-82269066

section 2 | LED ARRAYS, LIGHT ENGINES & MODULES

**proto labs®**  
Real Parts. Really Fast.™  
**Proto Labs Inc**  
■ See ad on page 37

**PTH**  
**PTH Group**

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Sagitario Lighting SLU  
SAKMA Electronica Industrial SA  
Selectronic

**SHARP**  
**Sharp Microelectronics Europe**  
■ See ad on page 87

**Signcomplex Ltd**  
■ See ad on page 75  
Solid State LED Lighting  
Spark LED Lighting (HK) Co Ltd  
Strataplex Inc  
Taiwan Oasis Technology Co Ltd  
TEAM Instruments Co Ltd  
Tecartex Digital Solutions SL  
TerraLUX Inc

**Thomas Research Products**  
*Innovative & Energy Saving Lighting Controls*  
**Thomas Research Products**  
■ See ad on page 51

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Vigilant Technology Co Ltd  
Wilbrecht Ledco Inc  
World of Lights LED Solutions Inc  
Xicato Inc

**YUYANG DNU**  
**YUYANG DNU Co Ltd**  
■ See ad on page 4

Zydoled

**PACKAGED MULTICHIP LED ARRAYS**  
Allied Electronics

**α-1**  
**Alpha-One Electronics Ltd**

**AMERICAN BRIGHT OPTOELECTRONICS CORP.**  
**American Bright Optoelectronics Corp**  
■ See ad on page 17

Challenge Electronics Ltd  
Clandell Ltd  
CS Bright Corp  
Digi-Key Corp  
**EBV Elektronik**  
■ See ad on page 101

**EDISON**  
**Edison Opto Corp**  
■ See ad on page 21

Excelitas Technologies Corp

**Farnell**  
**Farnell**

International Light  
Interplex Engineered Products  
Kingbright Electronic Europe GmbH  
LEDtronics Inc  
Lextar Electronics Corp  
LG Innotek  
Ligitek Electronics Co Ltd

**LUMICHIP**  
CREATING LIGHT  
**Lumichip Ltd**

Luminus Devices  
LuxInTec SL

**LYNK LABS**  
**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd

**NU HORIZONS ELECTRONICS**  
An Arrow Company  
**Nu Horizons Electronics**  
■ See ad on page 15

OPTILED Lighting

**OPTO DIODE CORP.**  
**Opto Diode Corp**

Optogan Group  
Optotek Ltd  
PerkinElmer Inc  
Raled LLC  
Sagitario Lighting SLU  
Saniltech Co Ltd  
Selectronic

**SEOUL**  
**SEOUL SEMICONDUCTOR**  
**Seoul Semiconductor**  
■ See ad on front cover

**SHARP**  
**Sharp Microelectronics Europe**  
■ See ad on page 87

**Signcomplex Ltd**  
■ See ad on page 75  
Taiwan Oasis Technology Co Ltd  
Three Five Compounds Inc  
UPEC Electronics Corp  
VAOPTO

# Asia's largest autumn lighting fair



## Hong Kong International Lighting Fair (Autumn Edition)

27-30 October 2012 • Hong Kong Convention and Exhibition Centre

- Prime downtown location
- Over 2,100 quality exhibitors from 31 countries and regions
- Don't miss the brand-name 'Hall of Aurora', along with other themed zones covering Commercial Lighting, Household Lighting, LED & Green Lighting and Outdoor Lighting, etc.

[www.hktdc.com/ex/hklightingfairae/02](http://www.hktdc.com/ex/hklightingfairae/02)

Hotel sponsorship of up to HK\$2,100 (approx. USD270) for first-time buyers – please contact the HKTDC office at:  
Tel: (1 212) 8388 688 • Fax: (1 212) 8388 941 • Email: [new.york.office@hktdc.org](mailto:new.york.office@hktdc.org)

### Act now for FREE admission!

For trade visitors, register now for your FREE admission badge through one of the following channels:

**Website** – visit [www.hktdc.com/ex/hklightingfairae/02](http://www.hktdc.com/ex/hklightingfairae/02);

**Smartphone Info Site** – download HKTDC Mobile at iPhone App Store, BlackBerry App World or Android Market; or

**Mobile Info Site** – visit [www.hktdc.com/wap/lightae/T119](http://www.hktdc.com/wap/lightae/T119)

Official Carrier:



Official Air Express Co.:

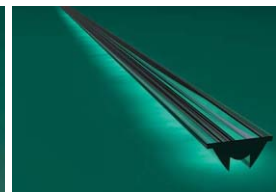
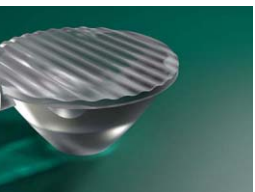


Your business · Our mission |





LED OPTICS, REFLECTORS AND CUSTOM DESIGNS  
TO SUIT ALL YOUR APPLICATIONS AND NEEDS



INNOVATE • SPECIALISE • INTEGRATE • GLOBALISE

[WWW.CARCLO-OPTICS.COM](http://WWW.CARCLO-OPTICS.COM)

Please see directory for full contact details

carclo  
technical plastics



# SECTION 3

# LEDs MAGAZINE

## OPTICS, PACKAGING & THERMAL MANAGEMENT

Section sponsor:



### PACKAGING & OPTICS

#### ALUMINUM CASINGS

**Aeon Lighting Technology Inc**  
■ See ad on page 27

Jin Tay Industries

**KLUS**

**Nu Horizons Electronics**  
An Arrow Company  
■ See ad on page 15

**Sapa Extrusions**

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

#### BONDING MATERIALS (EPOXIES, TIMS, SOLDERS ETC)

ACC Silicones Europe

**Arlon LLC**

**The Bergquist Co**

Brewer Science Inc  
Chooyu Chemical Co Ltd  
Denka Chemicals GmbH  
Digi-Key Corp  
Dow Corning Corp  
Dymax Corp  
Ellsworth Adhesives  
Epoxy Technology Inc

**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Indium Corp  
Intertronics  
Logitech Ltd

**Nordson ASYMTEK**

**Nu Horizons Electronics**  
An Arrow Company  
■ See ad on page 15

Penchem Technologies Sdn Bhd  
Rudolph Brothers & Co  
Saint-Gobain Ceramic Materials  
Sealing Devices Inc

#### ENCAPSULANTS (SILICONES, EPOXIES), DISPENSERS

ACC Silicones Europe

**American Bright Optoelectronics Corp**  
■ See ad on page 17

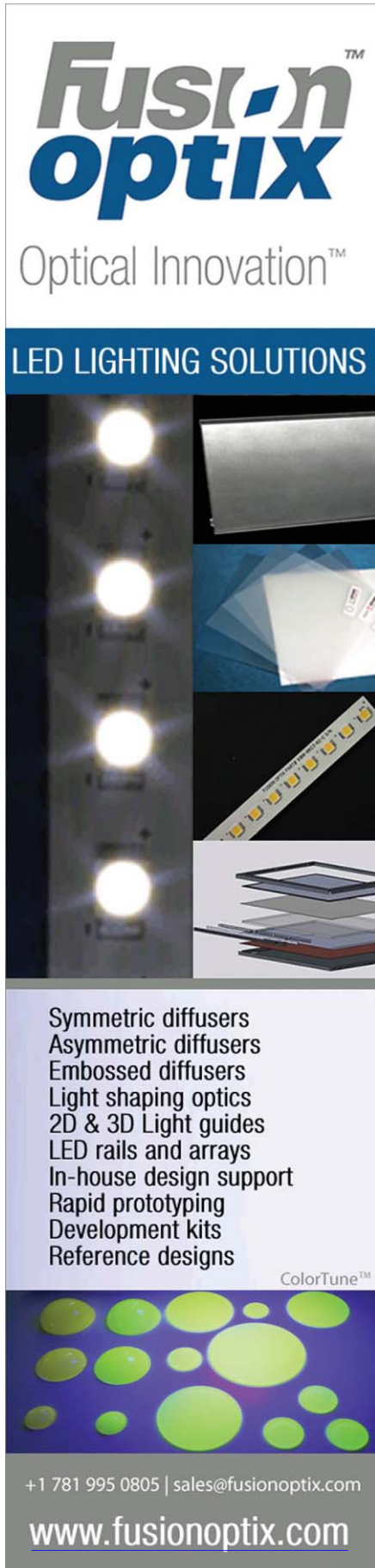
**Arlon LLC**

Chooyu Chemical Co Ltd  
Dow Corning Corp  
Dymax Corp  
Ellsworth Adhesives  
Epoxy Technology Inc

**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Indium Corp  
Intertronics  
Jiangsu Tetrachem Co Ltd  
LORD Corp  
Megasil Chemical Co Ltd

**Nordson ASYMTEK**



**Fusion Optix™**  
Optical Innovation™

**LED LIGHTING SOLUTIONS**

- Symmetric diffusers
- Asymmetric diffusers
- Embossed diffusers
- Light shaping optics
- 2D & 3D Light guides
- LED rails and arrays
- In-house design support
- Rapid prototyping
- Development kits
- Reference designs

ColorTune™

+1 781 995 0805 | sales@fusionoptix.com  
[www.fusionoptix.com](http://www.fusionoptix.com)

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT SPONSOR |  **carclo**  
technical plastics

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

NuSil Technology  
Penchem Technologies Sdn Bhd  
Protect-R-Shield  
Rudolph Brothers & Co  
Sealing Devices Inc

**Shin-Etsu**

**Shin-Etsu Silicones of America**  
■ See ad on page 25

Specialty Coating Systems

**INSULATED METAL SUBSTRATES**

Allied Electronics

**ARLON**

**Arlon LLC**

**THE BERGQUIST COMPANY**

**The Bergquist Co**

Chooyu Chemical Co Ltd  
Denka Chemicals GmbH  
GrafTech International Ltd

**Heraeus**

**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Interplex Engineered Products  
Laird Technologies

**NU HORIZONS ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

PLANSEE SE

**sapa:**

**Sapa Extrusions**

  
**SinkPAD Corp**

Taconic Advanced Dielectric Division  
**LENSES & OTHER OPTICAL COMPONENTS**

Abrisa Industrial Glass  
Adept Optical  
Allied Electronics  
Bayer MaterialScience LLC  
BH Design Plus

 **carclo**  
technical plastics

**Carclo Technical Plastics Ltd**  
■ See ad on page 30

CerFlex International  
DBM Reflex Lighting Solutions  
Dow Corning Corp  
**EBV Elektronik**  
■ See ad on page 101

  
**Edison Opto Corp**  
■ See ad on page 21

Eldim SA  
Fairfield Crystal Technology

**Fusion Optix**

**Fusion Optix**  
■ See ad on page 32

**FUTURE Lighting Solutions**  
Making LED Lighting Solutions Simple™

**Future Lighting Solutions**  
■ See ad on page 62

Gaggione SAS  
Illumination Optics Inc  
Inno Optoelectronics Ltd

SPONSOR |  **carclo**  
technical plastics

 **INNOVATIONS IN OPTICS**

**Innovations in Optics Inc**

InteLED Corp  
IR-TEC International Ltd  
JENOPTIK Polymer Systems GmbH

**KHATOD®**  
LENSES FOR POWER LED

**Khatod Optoelectronic**

LED Engin Inc

 **LedLink**  
Linking LEDs to The Real World

**Ledlink Optics Inc**  
■ See ad on page 5

LED Optical Solutions  
Luminit  
LuxInTec SL  
Multiwave Corp

**NU HORIZONS**  
ELECTRONICS  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

NuSil Technology  
Ovation Polymers

**L U X E N**   
never before possible

**Phillips Lumileds Lighting**  
■ See ad on page 2

Phostech Optical Consulting & Patent Services

 **ProLight Opto**  
[www.prolightopto.com](http://www.prolightopto.com)

**ProLight Opto Technology Corp**

**proto labs®**  
Real Parts. Really Fast.™

**Proto Labs Inc**  
■ See ad on page 37

[LEDsmagazine.com](http://LEDsmagazine.com)



## Light up your creative vision with Makrolon® Lumen XT

Expand your LED fixture design freedom with Makrolon Lumen XT diffuser sheet. Developed for LED fixture lenses, this new polycarbonate product line diffuses light while maintaining high light transmission. The range of available diffusion levels allows you to optimize LED fixture performance and enables your creative vision for design.

### Makrolon® Lumen XT benefits

- Leading edge technology for uniform LED light diffusion
- Versatile range of diffusion levels
- Higher impact strength than glass or acrylic for damage prone areas
- Temperature resistance allows more design flexibility
- UL listed flammability rating

**For more information:**  
800.457.3553 or [www.sheffieldplastics.com](http://www.sheffieldplastics.com)

Bayer MaterialScience LLC  
119 Salisbury Road  
Sheffield, MA 01257



**makrolon®**

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

SPONSOR |  **carclo**  
technical plastics



**PTH Group**

Puritan Plastics Inc  
Radco Infusion Technologies LLC  
Suncolor Corp  
Sycamore Glass Components  
UPEC Electronics Corp  
Upstream Engineering Inc  
WhiteOptics  
WT&T Inc  
ZC&R Coatings for Optics

**LIGHT GUIDES**

Adept Optical  
Allied Electronics



**Carclo Technical Plastics Ltd**  
■ See ad on page 30

DBM Reflex Lighting Solutions  
Dolan-Jenner Industries  
Dow Corning Corp  
Dymax Corp  
**EBV Elektronik**  
■ See ad on page 101  
Edgelit Acrylics LLC  
ELMA Electronic Inc  
Fiberguide Industries Inc



**Fusion Optix**  
■ See ad on page 32

Gaggione SAS



**Global Lighting Technologies**  
■ See ad on page 71

Hamamatsu Corp  
Illumination Optics Inc  
IntelLED Corp



**Khatod Optoelectronic**

Luminit  
LuxInTec SL  
Multiwave Corp  
Neon-LED International (HK) Ltd



**Nu Horizons Electronics**  
■ See ad on page 15

Phostech Optical Consulting & Patent Services



**PTH Group**

SCHOTT North America Inc  
Taiwan Oasis Technology Co Ltd

**OPTICAL DESIGN & CONSULTING**

3DZ Ltd  
Adept Optical  
**Bayer MaterialScience LLC**  
■ See ad on page 33  
BH Design Plus  
BizriOptics  
Bright View Technologies



**Carclo Technical Plastics Ltd**  
■ See ad on page 30

Continental Inc  
DBM Reflex Lighting Solutions



**Edison Opto Corp**  
■ See ad on page 21



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fiberdyne Energy/Edison LED



**Fusion Optix**  
■ See ad on page 32



**Future Lighting Solutions**  
■ See ad on page 62

Gaggione SAS  
Greenlight Optics LLC



**Heatron Inc**

Illumination Optics Inc  
Inno Optoelectronics Ltd  
INOV Optical Development  
IntelLED Corp  
JENOPTIK Polymer Systems GmbH



**Khatod Optoelectronic**

**Lambda Research Corp**  
■ See ad on page 39



**Ledlink Optics Inc**  
■ See ad on page 5

Lextar Electronics Corp  
Lighting Sciences Inc  
Light Prescriptions Innovators LLC  
Lumentra Inc



**Lumichip Ltd**

LuxInTec SL  
MAZeT GmbH  
OEC AG  
opsira GmbH  
Optics Balzers AG

# LM-82/LM-80/LM-79 Test Services

## Setting the Standard for LED Measurement



# Complete Services

## LM-82 / LM-80 / LM-79 Testing Services

Orb Optronix was the first independent third party ISO 17025 accredited U.S. Laboratory offering complete LM-80 Lumen Maintenance Testing

- ENERGY STAR / EPA Recognized
- LM-79, LM-80, LM-82, DLC and integral lamp lumen maintenance testing

# Complete Systems

## ETΦ™ LED Characterization Systems – Ideal for LM-82

- TEC Temperature Control with Ts, Tc, Tj Monitoring
- Highly Accurate LED Spectral Flux Measurements
- DC and PWM Power Supply Controls
- Supports AC Power Supply for LM-82 Systems
- NIST Traceable Electrical-Thermal-Optical Data

SpectralSuite™ Software




Hardware Solutions Including: Retrofit or Custom

ORB OPTRONIX, INC. • +01 425.605.8500 • Sales@OrbOptronix.com  
Please visit OrbOptronix.com for a full list of products & services

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

SPONSOR |  **carclo**  
technical plastics

OPTIS SAS



**Orb Optronix Inc**  
■ See ad on page 35

Phostech Optical Consulting & Patent Services  
PicusLED  
Products with Passion  
Puritan Plastics Inc  
Sagitario Lighting SLU  
STR Group Ltd



**Synopsys Inc**



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UPEC Electronics Corp  
Upstream Engineering Inc  
West Bank Engineering Consultancy Ltd

**OPTICAL FILMS, DIFFUSERS, MATERIALS**

Abrisa Industrial Glass  
Abrisa Technologies  
Adept Optical  
**Bayer MaterialScience LLC**  
■ See ad on page 33  
Bayer MaterialScience LLC  
Bright View Technologies



**Carclo Technical Plastics Ltd**  
■ See ad on page 30

Dow Corning Corp  
Edge Electronics Inc  
Ellsworth Adhesives  
Epoxy Technology Inc



**Fusion Optix**  
■ See ad on page 32

IntelLED Corp  
Luminit  
Materion Corp  
Neon-LED International (HK) Ltd



**Nu Horizons Electronics**  
■ See ad on page 15  
An Arrow Company

Optics Balzers AG  
Phostech Optical Consulting & Patent Services



**PTH Group**

Puritan Plastics Inc  
Radco Infusion Technologies LLC  
Rudolph Brothers & Co  
Sealing Devices Inc  
Suncolor Corp  
Sycamore Glass Components  
WhiteOptics  
ZC&R Coatings for Optics


**PACKAGES & RAW MATERIALS FOR PACKAGES**

ACC Silicones Europe  
Accuratus Corp  
AG Materials Inc  
Cool Polymers Inc  
Epoxy Technology Inc



**Heraeus Materials Technology Gmbh & Co KG**  
■ See ad on page 41

Interplex Engineered Products  
Materion Corp



**Proto Labs Inc**  
■ See ad on page 37  
Real Parts. Really Fast.™

Saniltech Co Ltd




Sapa Extrusions

Specialty Coating Systems



**Ticona Engineering Polymers**  
Performance Driven Solutions™

**PACKAGING & ASSEMBLY - CONTRACT MANUFACTURING**



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AT&S AG  
Challenge Electronics Ltd



**Heatron Inc**



**Heraeus Materials Technology Gmbh & Co KG**  
■ See ad on page 41

LuxInTec SL  
Palomar Technologies Inc



**Proto Labs Inc**  
■ See ad on page 37  
Real Parts. Really Fast.™



**SinkPAD Corp**

Specialty Coating Systems  
Thermal Solution Resources LLC

# Real parts. Really fast.

Simply upload your 3D CAD model, and get your lighting and LED parts fast.

## protomold®

Injection Molding in 1-15 days.  
Best for 10-10,000+ parts.  
Priced from \$1495.

Choose from hundreds of engineering-grade resins, including HDPE, Polypropylene, ABS/PC, Acetal, PBT, Polycarbonate, Nylon 66, Polyamide and LPDE.



acrylic lighting component

## firstcut®

CNC Machining in 1-3 days.  
Best for 1-10 parts.  
Priced from \$95.

Choose from 30 different materials including ABS, Nylon, PC, Delrin, PEEK, ULTEM, aluminum and brass.



aluminum heat sink

## It's easy to work with Proto Labs.

Choose CNC machining or injection molding, whichever is best for your project. Upload your CAD model and receive an automated, interactive quote in hours. Once approved, our cluster computing technology and automated manufacturing systems will deliver real parts using real materials in as little as one day. That's the real story.

©2012 Proto Labs, Inc. ISO 9001:2008 Certified

Check out our video design tips!



**proto labs®**  
Real Parts. Really Fast.™

### Get Your Protogami

Our newest design aid is a cool kaleidocycle that shows the effect of materials on finishes. Visit [www.protolabs.com/parts](http://www.protolabs.com/parts) today and request your free Protogami! Enter code LM12A.

Call **877.479.3680** or visit [www.protolabs.com](http://www.protolabs.com)



section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

SPONSOR |  **carclo**  
technical plastics

**PACKAGING & ASSEMBLY EQUIPMENT**

APS Novastar



**Heraeus Materials Technology Gmbh & Co KG**  
■ See ad on page 41

LORD Corp  
Micro Modular System



**Nordson ASYMTEK**

Palomar Technologies Inc  
Specialty Coating Systems  
Surface Mount Techniques SMT  
SUSS MicroTec  
TDK Corp  
Towa Corp

**PCBS**

100 West Electronics



**Arlon LLC**



**The Bergquist Co**

Cambridge America LLC  
CCS International Circuits LLC  
Challenge Electronics Ltd  
Denka Chemicals GmbH  
Dipet-M Co Ltd



**Edison Opto Corp**  
■ See ad on page 21

GrafTech International Ltd  
Haeusermann GmbH



**Heatron Inc**

Insight Electronic Group  
Insight Products USA  
LED-Depot



**Ledlink Optics Inc**  
■ See ad on page 5

Molex  
Neon-LED International (HK) Ltd



**Nu Horizons Electronics**  
■ See ad on page 15



**Optocore Ltd**



**Orb Optronix Inc**  
■ See ad on page 35

Saniltech Co Ltd



**SinkPAD Corp**

Taiwan Oasis Technology Co Ltd  
TPL Vision  
Unity-Advance Electronics Co Ltd  
Vexica Technology Ltd  
Wilson Process Systems

**PHOSPHORS & QUANTUM DOTS**

EMD Chemicals Inc



**Intematix Corp**

LEDtronics Inc  
Lightscape Materials Inc  
Materion Corp  
Nichia America Corp

**SOFTWARE FOR OPTICAL DESIGN**

BizriOptics  
**Lambda Research Corp**  
■ See ad on page 39  
OEC AG  
OPTIS SAS  
PicusLED  
RSoft Design Group  
STR Group Ltd



**Synopsys Inc**

ZEMAX Development Corp

**SOFTWARE FOR THERMAL DESIGN**

Advanced Thermal Solutions Inc  
Blue Ridge Numerics (CFdesign)



**Future Lighting Solutions**  
■ See ad on page 62




**Mentor Graphics Corp**

OPTIS SAS  
STR Group Ltd

**THERMAL DESIGN & CONSULTING**

Advanced Thermal Solutions Inc



**American Bright Optoelectronics Corp**  
■ See ad on page 17



SPONSOR |  **carclo**  
technical plastics

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

ATC Semitec Ltd  
AT&S AG  
BH Design Plus  
Blue Ridge Numerics (CFdesign)  
Challenge Electronics Ltd  
Chooyu Chemical Co Ltd  
Cooliance Inc



**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62



**Heraeus**


**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41



**EDISON**

**Edison Opto Corp**  
■ See ad on page 21

GrafTech International Ltd  
Haeusermann GmbH



**HEATRON**

**Heatron Inc**

Hokuriku Malaysia Sdn Bnd  
Illumination Optics Inc  
Lextar Electronics Corp  
LORD Corp  
LuxInTec SL  
Mango Electronics



**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11



**HELIO**

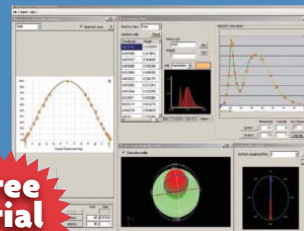
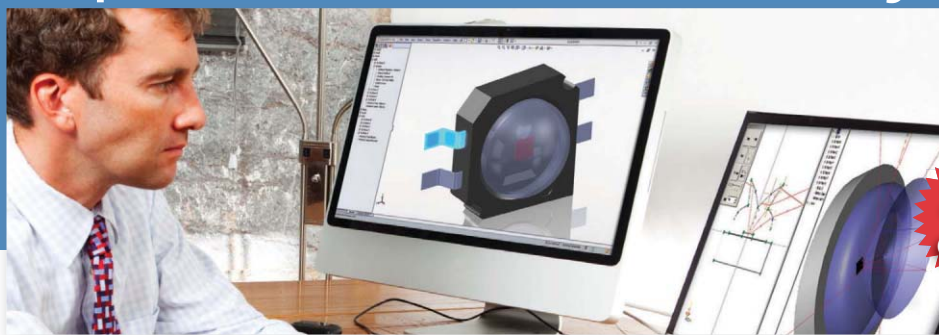
**HELIO Optoelectronics Corp**



**Mentor Graphics Corp**

Nuventix Inc

# Top 5 Reasons to Buy TracePro



**Free Trial Offer**

For a 30 Day Trial Offer Visit  
[www.lambdare.com/trials](http://www.lambdare.com/trials)

## TracePro® Software - Design and Analyze Any Optical/Illumination System

1. Easiest-to-use opto-mechanical software with full CAD integration
2. Simple Interactive Optimizer: sketch geometry, set variables, digitize targets, optimize
3. Lowest entry price for a permanent license
4. Multiple editions to fit your needs with upgrade path to help you with more complex problems
5. Our TracePro Bridge SolidWorks® add-in easily defines optical properties in your SolidWorks model



TracePro is a registered trademark of Lambda Research Corporation and SolidWorks is a registered trademark of Dassault Systemes

Lambda Research Corporation, 25 Porter Road, Littleton MA 01460 (+1) 978-486-0766 [www.lambdare.com](http://www.lambdare.com)

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

SPONSOR |  **carclo**  
technical plastics



**Orb Optronix Inc**  
■ See ad on page 35

Parker Chomerics  
Raled LLC



**ROAL Electronics SpA**  
■ See ad on page 46

RTP Co



**Sapa Extrusions**

Sealing Devices Inc



**Sunonweath Electric Machine Industry Co Ltd**  
■ See ad on page 1

ThermoKing Technology Int'l Corp  
Thermal Solution Resources LLC  
Wakefield Solutions  
West Bank Engineering Consultancy Ltd


**THERMAL HEAT SINKS**

Advanced Thermal Solutions Inc



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Arroyo Instruments  
AT&S AG

Blue Ridge Numerics (CFdesign)  
Challenge Electronics Ltd  
Cooliance Inc  
Denka Chemicals GmbH  
Digi-Key Corp  
Edge Electronics Inc



**Edison Opto Corp**  
■ See ad on page 21



**Future Lighting Solutions**  
Making LED Lighting Solutions Simple™  
**Future Lighting Solutions**  
■ See ad on page 62

GlacialLight  
Golden Polymer Extrusion Technology Co Ltd  
GrafTech International Ltd



**Heatron Inc**



**Heraeus Inc**



**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Hokuriku Malaysia Sdn Bnd  
Insight Electronic Group  
Insight Products USA  
Interplex Engineered Products



**Khatod Optoelectronic**

LEDsupply  
LuxInTec SL



**Nu Horizons Electronics**  
■ See ad on page 15

Nuventix Inc  
Ovation Polymers  
Parker Chomerics  
PLANSEE SE




**Proto Labs Inc**  
Real Parts. Really Fast.™  
■ See ad on page 37

RTP Co



**Sapa Extrusions**



**Sunonweath Electric Machine Industry Co Ltd**  
■ See ad on page 1

ThermoKing Technology Int'l Corp  
Thermal Solution Resources LLC  
Vexica Technology Ltd  
Wakefield Solutions  
Wavelength Electronics Inc

**THERMAL SUBSTRATE MATERIALS**

Accuratus Corp  
Allied Electronics  
Aluwave AB



**Arlon LLC**

Bayer MaterialScience LLC



**The Bergquist Co**

Chooyu Chemical Co Ltd

SPONSOR | **carclo**  
technical plastics

section 3 | OPTICS, PACKAGING & THERMAL MANAGEMENT

Cooliance Inc  
Denka Chemicals GmbH  
Digi-Key Corp  
Ellsworth Adhesives  
Epoxy Technology Inc  
GrafTech International Ltd  
Graham Associates Inc

Hokuriku Malaysia Sdn Bnd  
IRC  
Laird Technologies  
LORD Corp  
Marian Inc



**Heatron Inc**



**Nordson ASYMTEK**



**ROAL Electronics SpA**  
■ See ad on page 46



**Heraeus Inc**



**Nu Horizons Electronics**  
■ See ad on page 15




**SinkPAD Corp**



**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Ovation Polymers  
Parker Chomerics  
Penchem Technologies Sdn Bhd  
PLANSEE SE



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Taconic Advanced Dielectric Division  
Wavelength Electronics Inc

## LEDs go SMART with SCB-Technology

Your alternative for ceramic boards

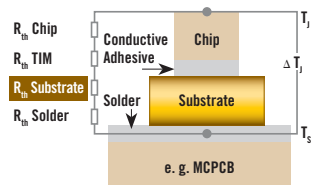


Heraeus Stamped Circuit Boards for LED application  
(Flexible Substrates for OSLUX LED from Osram Opto Semiconductors)

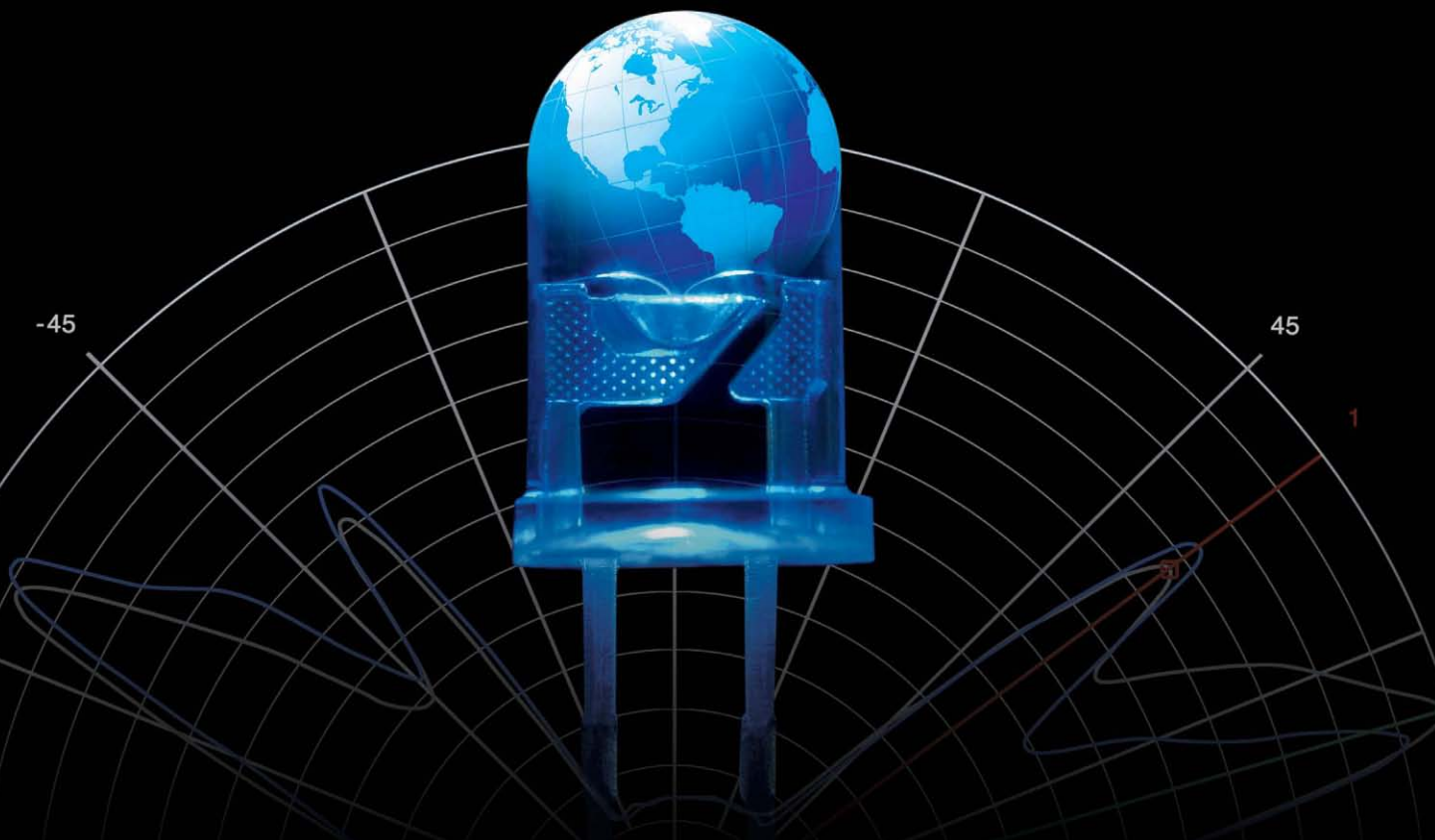
For more information about SCB call +49 (6181) 35-3400 or visit our website: [www.heraeus-packaging-technology.com](http://www.heraeus-packaging-technology.com)

## Heraeus

- Stamped Circuit Board (SCB) is an innovative solution for LED packaging substrates.
- The technology allows precise structuring and lamination of multi-layer foils in a high efficient reel-to-reel mass production.
- SCB is your alternative for ceramic LED boards providing a great thermal performance at lower costs.
- Thermal improvement of the LED substrate with high conductive materials (up to 380 W/mK) possible.
- Offers a thermal management solution for each chip type (CoB or Multichip Arrays): horizontal, vertical or flip chip structure.



We bring quality to light.



## LED test & measurement solutions from the world leader

Instrument Systems continues to set the benchmark in LED metrology. Whether testing individual LEDs (standard or high-power), LED modules, or OLEDs - the global LED industry relies on us to engineer superior measurement equipment for high-speed production testing and high-performance R&D and QC applications.



**Our instruments provide accurate and reliable results as per CIE recommendations and methods:**

- Luminous flux [lm], luminous intensity [cd], and luminance [cd/m<sup>2</sup>]
- Chromaticity coordinates x,y,z and u'v'
- Color temperature and color rendering index
- Dominant wavelength and spectral data
- Spatial radiation pattern

 **Instrument  
Systems**  
light measurement

Instrument Systems Germany · Phone: +49 89 45 49 43 0 · [info@instrumentsystems.com](mailto:info@instrumentsystems.com) · [www.instrumentsystems.com](http://www.instrumentsystems.com)

# SECTION 4

# LEDs MAGAZINE

## TEST & MEASUREMENT

Section sponsor:  **Instrument Systems**  
light measurement

### TEST & MEASUREMENT EQUIPMENT

Advanced Thermal Solutions Inc  
Allied Electronics  
APS Solutions GmbH  
Arroyo Instruments



**Avantes BV**

Bentham Instruments Ltd  
B&W TEK Inc  
Capovani Brothers Inc  
Cepoint Networks LLC  
Eldim SA



**Gamma Scientific Inc**

Gigahertz-Optik Inc  
Hamamatsu Corp  
Hi-Rel Products  
INFICON



**Instrument Systems GmbH**  
See ad on page 42

International Light  
Keithley Instruments Inc



**Konica Minolta Sensing Americas Inc**

Konica Minolta Sensing Singapore Pte Ltd  
**Labsphere Inc**  
See ad on page 44  
LayTec AG  
Lighting Sciences Inc  
Lumentra Inc  
LUX-TSI Ltd  
Majantys  
Meiji Techno America



**Mentor Graphics Corp**

Microlynx Systems Ltd  
Micro Modular System  
MKS Instruments Inc



**Nu Horizons Electronics**  
See ad on page 15

Operations Technology Inc  
opsira GmbH  
Optomistic Products Inc  
Opto System Co Ltd




**Orb Optronix Inc**  
See ad on page 35

Precision Photometrics Ltd



**Riff Co Inc**  
See ad on page 44

Selection Inc  
SemiProbe  
Specialty Coating Systems  
StellarNet Inc




**Sunonwealth Electric Machine Industry Co Ltd**  
See ad on page 1



**UL - Underwriters Laboratories Inc**  
See ad on page 98

Vektrex  
Wei Min Industrial Co Ltd  
WELLS-CTI  
Wilger Liaison Co Inc



**Wilger Testing Co Inc**

### THIRD-PARTY TESTING SERVICES

APS Solutions GmbH  
Bentham Instruments Ltd  
Eldim SA



**Gamma Scientific Inc**

Gigahertz-Optik Inc  
Hi-Rel Products

section 4 | TEST & MEASUREMENT


SPONSOR | **Instrument Systems**  
light measurement



**Intertek**  
■ See ad on page 45



**Orb Optronix Inc**  
■ See ad on page 35



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98


KEMA

OSA Opto Light GmbH  
Shanghai Yaming-Lighting Co Ltd


Wilger Liaison Co Inc



**Keystone Certifications Inc**  
■ See ad on page 63



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1



**Wilger Testing Co Inc**

**Labsphere Inc**  
■ See ad on page 44  
Lighting Sciences Inc  
Lumentra Inc  
LUX-TSI Ltd  
Majantys  
opsira GmbH

TÜV SÜD America Inc

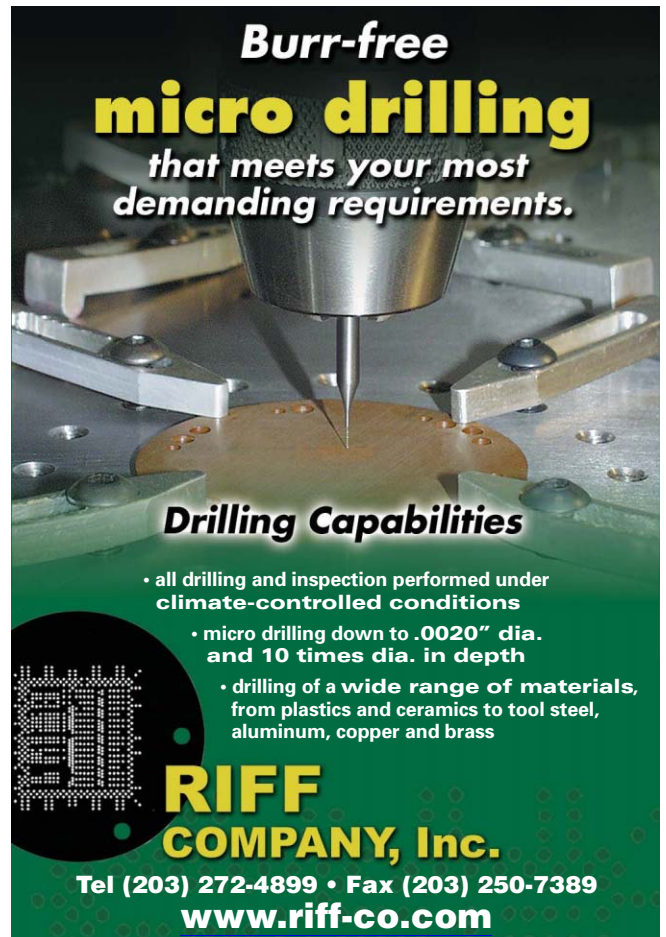


**MASTER LIGHT**

- Light Measurement
- Sensor and Imager Calibration
- Integrating Spheres and Components
- Reflectance Materials, Coatings, Standards and Targets
- Spectroscopy
- OEM Applications

**labsphere**  
A HALMA COMPANY

[www.labsphere.com](http://www.labsphere.com) / +1 603 927 4266

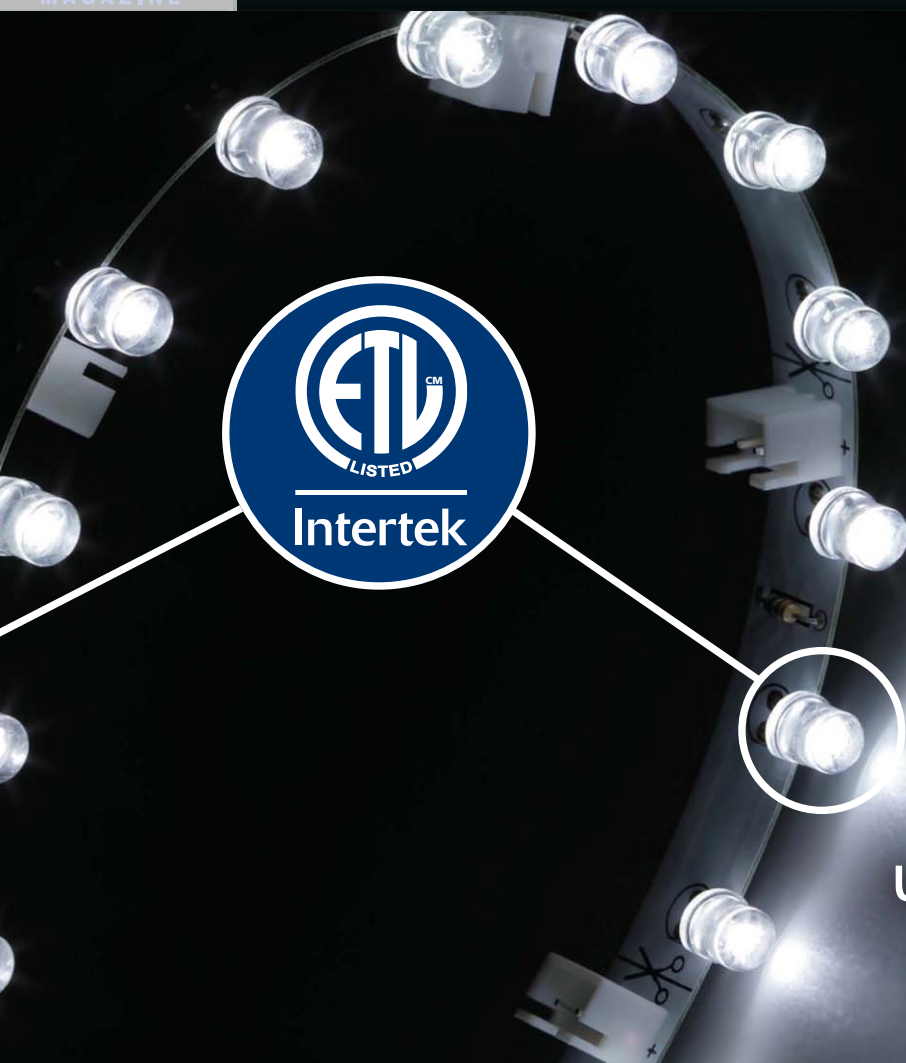


**Burr-free micro drilling**  
that meets your most demanding requirements.

**Drilling Capabilities**

- all drilling and inspection performed under climate-controlled conditions
- micro drilling down to .0020" dia. and 10 times dia. in depth
- drilling of a wide range of materials, from plastics and ceramics to tool steel, aluminum, copper and brass

**RIFF COMPANY, Inc.**  
Tel (203) 272-4899 • Fax (203) 250-7389  
[www.riff-co.com](http://www.riff-co.com)



# unparalleLED.

**Legacy. Speed. Efficiency. Results.** With more than a century of testing expertise and a heritage born from Thomas Edison in 1896, Intertek provides industry-leading turnaround time, incomparable efficiencies, and unrivaled bottom line results. Our Lighting Centers of Excellence feature state-of-the-art technologies for safety, performance and energy efficiency testing, and our experienced engineers help bring your LED lamps and luminaires to market at the speed of light. Among our many capabilities, we offer:

#### Specialized Safety and Performance Testing

- ETL Certification for North American market access
- Expert Photometry Testing
- LM-79 Sphere Testing (CALiPER-qualified)

#### One-Stop Solutions for Energy Efficiency Programs

- ENERGY STAR®, CEC, and NRCAN

Intertek's ability to provide a complete solution for your global testing and certification needs will streamline your process – saving time and money. Our history of delivering unparalleled results and products to market secures Intertek's legacy as the leader in LED testing innovations.



*Intertek's global network of laboratories offer a broad scope of local services to help you meet requirements for markets around the world.*

For more information, check out our *NEW* Lighting webpage  
[www.intertek.com/LEDsmagazine](http://www.intertek.com/LEDsmagazine)

1-800-WORLDCON (967-5352)

**Intertek**

Valued Quality. Delivered.

# LED Drivers for Every Lighting Environment

## Downlights & Track Lights



- 15W Dimmable**
- Triac dimming
  - 120 or 230 VAC input
  - Constant current output
  - Operates with leading or trailing edge dimmers

**ROAL**  
living energy

### TROPO



## General Commercial



- 35W & 70W Dimmable**
- Ultra small: 2.76" x 1.57" x 1.06" (70 x 40 x 27cm)
  - High efficiency ~ 90%
  - Dimmable output (with 0-10VDC input)
  - Wide range input (90-305VAC)

### STRATO



## High Lumen with Active Cooling



- 35W Dimmable with AUX Power**
- Auxiliary output for powering active coolers
  - Temperature protection for LEDs
  - High efficiency ~ 90%
  - Dimmable output (with 0-10VDC input)

### VENTO



## Outdoor & Urban



- 70W Programmable**
- Wide range input (90-305VAC)
  - High efficiency ~ 90%
  - Field adjustable output
  - Dimmable output (with 0-10VDC input)
  - Dimmable with DMX or DALI control

### OZONE

Shown with optional programming tool



## Architectural & Entertainment



- 240W RGBW Programmable**
- 48VDC input
  - DMX and DALI compatible
  - Four (4) independent class 2 outputs
  - Linear dimming or PWM dimming
  - Real time clock and non volatile RAM

### SPECTRA



Choose from hundreds of models with best in class efficiencies and the smallest packages in the industry. Finding the perfect match for your lighting fixture is easy with our new Product Search Tool. For details visit: [www.roallivingenergy.com](http://www.roallivingenergy.com)



For additional information, e-mail us at: [ledsmag@roallivingenergy.com](mailto:ledsmag@roallivingenergy.com)



# SECTION 5

# LEDs MAGAZINE

## DRIVERS, CONTROL & CONNECTORS

Section sponsor:

**ROAL**  
living energy

### DRIVERS & CONTROL

#### COLOR SENSORS & CONTROLLERS

Allied Electronics  
ATG Electronics Corp  
Barthelme LED Solutions  
BellNett Technologies  
Challenge Electronics Ltd

**ColorStars**

Color Stars Inc  
■ See ad on page 83

Digi-Key Corp  
DigiLighting Inc  
D-LED Illumination Technologies

**eldoLED**  
your product | our drive

eldoLED BV

[EnvironmentalLights.com](http://EnvironmentalLights.com)  
ERG Lighting

**FUTURE**  
Lighting Solutions  
Making LED Lighting Solutions Simple™

Future Lighting Solutions  
■ See ad on page 62

Hamamatsu Corp  
Hephas Co Ltd  
HEP Tech Co Ltd  
i-vision Lighting Solutions Ltd  
JENOPTIK Polymer Systems GmbH  
LeddarTech  
LuxInTec SL  
Madrix  
Majantys  
MAZeT GmbH

**Microsemi**

Microsemi Corp

MSC Vertriebs GmbH  
Neo-Neon LED Lighting International Ltd

**NU HORIZONS**  
ELECTRONICS  
An Arrow Company

Nu Horizons Electronics  
■ See ad on page 15

Opto Tech Corp  
Orient Lighting Co Ltd  
Power Sources Unlimited

**PROLED**®

PROLED - MBN GmbH  
■ See ad on page 72

Quasar Light Co Ltd  
Ramp Plus Technologies Pvt Ltd

**ROAL**  
living energy

ROAL Electronics SpA  
■ See ad on page 46

Sagitario Lighting SLU  
Signcomplex Ltd  
■ See ad on page 57  
TAOS Inc

#### CUSTOM-DESIGNED DRIVERS

AC Electronics  
AEG Power Solutions (France) SAS  
Allegro MicroSystems Inc  
■ See ad on page 57  
Allied Electronics

Arrow Electronics EMEA  
BAG Electronics GmbH  
BellNett Technologies

**CEZOS**

CEZOS

**ColorStars**

Color Stars Inc  
■ See ad on page 83

Diana Electronic-Systeme GmbH  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
EcoTek Lighting  
eldoLED America Inc

**eldoLED**  
your product | our drive

eldoLED BV

Emergence Technology Consultants LLC  
Endicott Research Group (ERG) Inc  
[EnvironmentalLights.com](http://EnvironmentalLights.com)

**EPtronics**  
Driven by Efficient Power

EPtronics Inc  
■ See ad on page 56

ERG Lighting  
Exclara  
FSP Group USA  
FUTURELED GmbH  
Golden Polymer Extrusion Technology Co Ltd  
GRE Alpha Electronics Ltd  
■ See ad on page 18

section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy



**Heatron Inc**

HEP Tech Co Ltd  
Hongkong Forous Group Co Ltd  
Infineon Technologies AG

**Inventronics**  
■ See ad on page 53

iSine Inc  
IST Ltd  
ITACOIL Switching and Resonant pcb Transformers  
i-vision Lighting Solutions Ltd  
IVUS Energy Innovations  
LeddarTech



**LEDDynamics Inc**

Lextar Electronics Corp  
LG Innotek  
Light-Based Technologies



**Lumotech**  
■ See ad on page 48

LuxInTec SL  
MAZeT GmbH  
McWong International Inc  
Melux Control Gears Pvt Ltd  
Microlynx Systems Ltd



**Microsemi Corp**

Moons Industries (Europe) srl  
MOSO USA Inc  
Nanker LED Lighting Ltd

Neo-Neon LED Lighting International Ltd  
Norlux



**Nu Horizons Electronics**  
■ See ad on page 15

On Semiconductor  
Opto Tech Corp  
Powerbox  
Power Partners Inc  
Power Research Electronics  
Power Vector  
Prema Semiconductor GmbH  
Ramp Plus Technologies Pvt Ltd



**RECOM Power Inc**  
■ See ad on page 49



# THE NEW CREE LED ARRAY AND THE BEST WAY TO POWER IT.



## L05049 Adjustable 40W constant current driver

- Low inrush current
- High Power Factor (λ 0.98)
- 1-10V dimmable
- Up to 60 Volt
- Long lifetime

## Cree XLamp® CXA2011 LED Array

- Delivers up to 4.000 lumen
- Available in several bins
- High efficient

**Lumotech® + CREE**

# LED Drivers

**Buck/Boost LED Drivers - From 1W to 100W.**

**5 Year Warranty**

**Highest Efficiency**

**Dimming down to 0%**

**TRIAC Dimming**

**AC or DC Input**



For Application Support contact your local RECOM sales contact or go to:  
[www.recom-power.com](http://www.recom-power.com)



section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy

**ROAL**  
living energy

**ROAL Electronics SpA**  
■ See ad on page 46

Sagitario Lighting SLU  
Shenzhen Chipower Technology Co Ltd  
Sparkle Power Inc  
STMicroelectronics Inc  
Sunpower Technology LLP  
Tepcomp Oy

GridPlex Networks  
Helvar Oy Ab  
Innolux Pte Ltd  
iSine Inc  
ITACOIL Switching and Resonant pcb Transformers  
i-Tunnel (Indal Group)  
i-vision Lighting Solutions Ltd  
LG Innotek  
LuxInTec SL  
Macroblock Inc  
Madrix  
MAZeT GmbH  
Melux Control Gears Pvt Ltd

**ROAL**  
living energy

**ROAL Electronics SpA**  
■ See ad on page 46

**Signcomplex Ltd**  
■ See ad on page 75  
Solid State LED Lighting  
SoundOff Signal  
Synapse Wireless Inc  
Traxon Technologies Ltd  
Tridonic  
World of Lights LED Solutions Inc

**DRIVER ICs**  
**Allegro MicroSystems Inc**  
■ See ad on page 57  
Allied Electronics

**Thomas Research Products**  
Innovative & Energy Saving Lighting Controls

**Thomas Research Products**  
■ See ad on page 51

Vexica Technology Ltd  
Visual Interactive Ltd  
Wavelength Electronics Inc

**DIGITAL LIGHTING CONTROLLERS**

AppLED BV  
ATG Electronics Corp  
BAG Electronics GmbH  
BellNett Technologies  
Challenge Electronics Ltd  
Continental Inc  
Digi-Key Corp  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
DMS Lighting LLC  
**EBV Elektronik**  
■ See ad on page 101  
eldoLED America Inc

**Microsemi**

**Microsemi Corp**

Moons Industries (Europe) srl  
MOSO USA Inc  
National LED Direct  
National Semiconductor  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd

**ANALOGIC**  
TECH

**AnalogicTech**

**NU HORIZONS**  
ELECTRONICS  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

NXP Semiconductors  
Operations Technology Inc

ATC Semitec Ltd  
Challenge Electronics Ltd  
Dicrom Electronica SL  
Digi-Key Corp  
Diodes Inc  
**EBV Elektronik**  
■ See ad on page 101  
Eco Marketing

**eldoLED**  
your product | our drive

**eldoLED BV**

Exclara

**eldoLED**  
your product | our drive

**eldoLED BV**

EnvironmentalLights.com  
ERG Lighting  
Exclara  
Fobsun Electronics Ltd  
Frostdale Co Ltd

**optocore**

**Optocore Ltd**

Opto Tech Corp  
Opulent Technologies Inc

**Farnell**

**Farnell**

**PROLED**<sup>®</sup>

**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Ramp Plus Technologies Pvt Ltd

**FUTURE**  
Lighting Solutions  
Making LED Lighting Solutions Simple™

**Future Lighting Solutions**  
■ See ad on page 62

**FUTURE**  
Lighting Solutions  
Making LED Lighting Solutions Simple™

**Future Lighting Solutions**  
■ See ad on page 62

**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Mark Inc

Infineon Technologies AG  
iSine Inc  
LED-Depot  
Light-Based Technologies



# Thomas Research Products

SSL Solutions Faster Than The Speed Of Light

## Products TRP Supplies to OEMs

### LED Core™

Integrated Light Engine, Optics and Thermal Management Design



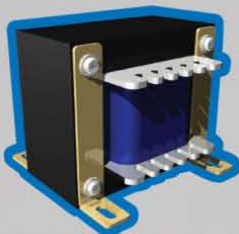
### LED Drivers

Constant-current, constant-voltage, custom outputs, and multi-channel



### Transformers

Step-down and step-up models enable fixtures to operate on any system voltage



### Surge Protectors

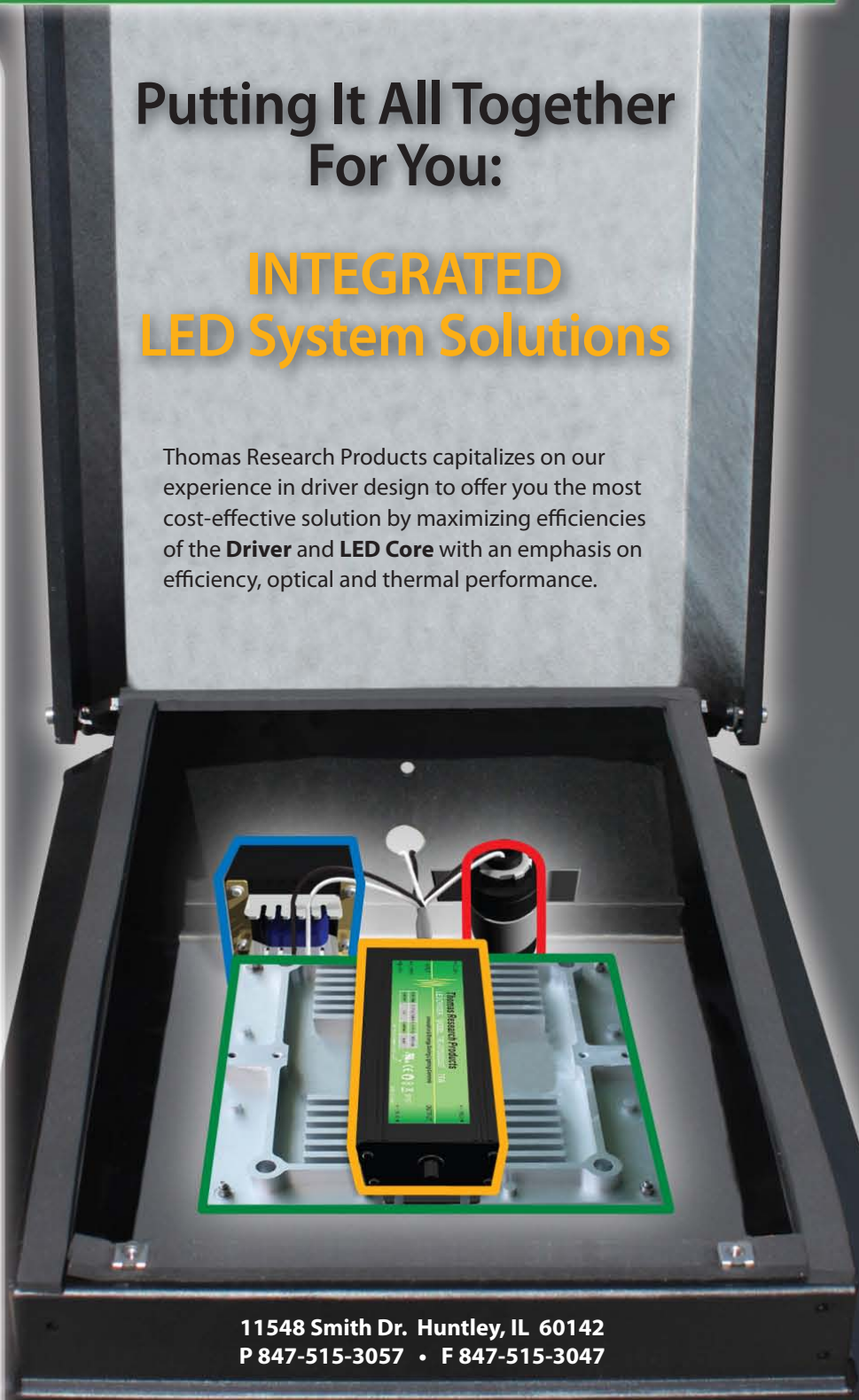
ANSI C62.41.2 compliant to protect fixtures from high-voltage line transients



## Putting It All Together For You:

# INTEGRATED LED System Solutions

Thomas Research Products capitalizes on our experience in driver design to offer you the most cost-effective solution by maximizing efficiencies of the **Driver** and **LED Core** with an emphasis on efficiency, optical and thermal performance.



11548 Smith Dr. Huntley, IL 60142  
P 847-515-3057 • F 847-515-3047

LEDsystems@ThomasResearchProducts.com  
www.thomasresearchproducts.com

section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy



**Lumotech**  
■ See ad on page 48

Macroblock Inc  
Marktech Optoelectronics  
Maxim Integrated Products



**Microsemi Corp**

National Semiconductor  
NEON-EC Ltd  
NEON-EK Ltd



**Nu Horizons Electronics**  
An Arrow Company  
■ See ad on page 15

NXP Semiconductors  
On Semiconductor  
Power Research Electronics  
Power Sources Unlimited  
Prema Semiconductor GmbH  
Richtek Corp  
ROHM Semiconductor USA LLC  
Senslite Corp



**Sharp Microelectronics Europe**  
■ See ad on page 87

STMicroelectronics Inc



**Texas Instruments**



**Toshiba Electronics Europe**  
■ See ad on page 64

Xing Henglong Lighting Technology Co Ltd  
ZMDI - Zentrum Mikroelektronik Dresden

**DRIVERS & POWER SUPPLIES**

100 West Electronics  
AC Electronics  
Advanced illumination  
AEG Power Solutions (France) SAS



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**AnalogicTech**

AppLED BV



**Arrow Electronics Inc**

Arroyo Instruments  
Astrodyne  
ATG Electronics Corp  
Atlanta Light Bulbs  
BAG Electronics GmbH  
BelleFlex Technologies LLC  
BellNett Technologies  
Beta Opto Technology Co Ltd  
[BG-LED.com](http://BG-LED.com)  
Binay Opto Electronics Pvt Ltd  
CAO Group Inc  
Capovani Brothers Inc



**CEZOS**



**Color Stars Inc**  
■ See ad on page 83

CUI Inc  
Digi-Key Corp  
DigiLighting Inc  
Digitalicht AG  
D-LED Illumination Technologies  
DMS Lighting LLC

Dynamic LED Ltd  
Ecopac Power  
Eden Park Illumination  
eldoLED America Inc



**eldoLED**  
your product | our drive  
**eldoLED BV**

element 14  
Endicott Research Group (ERG) Inc  
EO Lighting




**EPtronics Inc**  
■ See ad on page 56

ERG Lighting



**Excelsys Technologies Ltd**

Exclara



**Farnell**

Fobsun Electronics Ltd  
Focus LLC



**FrontAnD Technology**  
■ See ad on page 91

FSP Group USA



**Future Lighting Solutions**  
Making LED Lighting Solutions Simple™  
■ See ad on page 62

GlacialLight  
Golden Polymer Extrusion Technology Co Ltd  
Graham Associates Inc

# INVENTRONICS

Driving the Lighting Revolution  
LED Drivers 10 W-300W  
Efficient • Reliable • World Class

C  US  



Constant Current • Constant Voltage • Constant Current With Dimming • Multi-channel



Visit our website to download the white paper "Profitably Powering Solid State Lighting"

## Inventronics (Asia)

Bldg. B, Eastcom City, 66 Dongxin Rd.,  
Binjiang District, Hangzhou, Zhejiang  
310053, China

Tel: +86-571-56565800 56565811

Email: [sales@inventronics-co.com](mailto:sales@inventronics-co.com)

## Inventronics (North America)

4701 SW 20<sup>th</sup>  
Oklahoma City, OK 73128  
USA

Tel: +1 405-600-7480

Email: [usa-sales@inventronics-co.com](mailto:usa-sales@inventronics-co.com)

[www.inventronics-co.com](http://www.inventronics-co.com)

section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy

**GRE Alpha Electronics Ltd**

■ See ad on page 18

Green Mark Inc  
GridPlex Networks



**Heatron Inc**

HEICO lighting  
Helvar Oy Ab  
HEP Tech Co Ltd  
Holders Components  
Hongkong Forous Group Co Ltd  
Infineon Technologies AG  
International Light

**Inventronics**


■ See ad on page 53

IST Ltd  
ITACOIL Switching and Resonant pcb  
Transformers  
Jireh Optoelectronics  
Juice Technology Ltd  
Kolektor Magma doo  
LeddarTech



**LEDdynamics Inc**

LEDIKO  
LED Lighting Power Supplies  
LED Retro8  
LED Specialists Inc  
LEDsupply  
Lextar Electronics Corp  
LG Innotek  
Light-Based Technologies



**Lightech Electronics**

Lighthouse WorldWide LLC  
Lightspeed Technologies Inc  
LonTin Industry Co Ltd  
LumiCe Co Ltd



**Lumotech**  
■ See ad on page 48

Lutron Electronics  
LuxInTec SL



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc



**Magtech Industries Corp**

Maxx LED Inc  
McWong International Inc



**Mean Well USA Inc**  
■ See ad on page 55

Melux Control Gears Pvt Ltd



**Microsemi Corp**

Moons Industries (Europe) srl  
MOSO USA Inc  
MSC Vertriebs GmbH  
MTEC GmbH  
National LED Direct  
National Semiconductor  
NEON-EC Ltd  
NEON-EK Ltd  
Neo-Neon LED Lighting International Ltd



**NMB Technologies Corp**

Norlux



**Nu Horizons Electronics**  
■ See ad on page 15

NXP Semiconductors  
On Semiconductor  
Optotek Ltd  
Permlight Products Inc  
Permlight for Signs



**Philips Emergency Lighting**

Philips Lighting Co  
Powerbox  
PowerLED  
Power Partners Inc  
Power Research Electronics  
Power Sources Unlimited  
Power Vector  
Products with Passion



**PROLED - MBN GmbH**  
■ See ad on page 72

Raled LLC



**RECOM Power Inc**  
■ See ad on page 49

Richtek Corp



**ROAL Electronics SpA**  
■ See ad on page 46

ROHM Semiconductor USA LLC



**Sharp Microelectronics Europe**  
■ See ad on page 87

Signal Transformer Co  
SoundOff Signal  
Sparkle Power Inc  
STMicroelectronics Inc  
Sunpower Technology LLP  
Super Service System  
Surface Mount Techniques SMT  
TDK Corp





# Thinking Green?



Total Solutions For

# LED POWER SUPPLY



- HLG series** 40W ~ 320W
- 95% high efficiency / PFC / IP65~67 / 277VAC / 4KV surge / 3-in-1 dimming(B-type)
  - Suitable for LED street lighting, outdoor LED lighting, LED display



- PLN/HLN series** 20W ~ 96W
- PFC / 277VAC / IP64 / Class 2 / 3-in-1 dimming (HLN-B type)
  - Suitable for indoor LED lighting



- CLG series** 60W ~ 150W
- 91% high efficiency / PFC / IP65~67 / 277VAC / 4KV surge
  - Suitable for LED street lighting, outdoor LED lighting, LED display



- PLC series** 30W ~ 96W
- 90% high efficiency / PFC / Class 2
  - Suitable for indoor LED lighting and LED display
  - Screw terminal style of I/O



- CEN series** 60W~96W
- 91% high efficiency / PFC / IP66 / 277VAC / 4KV surge / Class 2
  - Suitable for LED street lighting and outdoor LED lighting



- LPF series** 16W ~ 90W
- 91% high efficiency / PFC / IP67 / 277VAC / Class II input / 3-in-1 dimming(D-type) / Class 2
  - Suitable for indoor LED lighting, LED display



- HVG/HVGC series** 100W
- Wide input range: 180~480VAC
  - 92% high efficiency / PFC / IP67 / 3-in-1 dimming(B-type)
  - Suitable for outdoor LED lighting and street lighting



- LP series** 18W ~ 100W
- IP67 / Class II input / Class 2 (18~60W)
  - Suitable for LED-based decorative and architectural lighting, LED display



- LDV series** 185W
- Multiple channel C.C. output (6CH or 12CH)
  - PFC / IP67 / 277VAC
  - Built-in DC/DC driver ICs in LDV-185
  - Suitable for LED outdoor lighting



- APV/APC series** 12W ~ 35W
- Class II input / Class 2
  - Constant voltage design(C.V. mode) for APV series
  - Constant current design(C.C. mode) for APC series
  - Low cost, suitable for indoor LED lighting, LED display



- PLP/HLP series** 20W~80W
- PFC / PCB type / 277VAC / 3-in-1 dimming (HLP)
  - Suitable for LED lighting (built-in type)



- PCD/PLD series** 16W/25W
- PFC / AC phase-cut dimming / Work with leading edge and trailing edge TRIAC dimmers
  - Non AC dimming for PLD-25
  - Suitable for indoor LED lighting

[ledpower@meanwellusa.com](mailto:ledpower@meanwellusa.com)  
Call us for OEM evaluate samples!

**MEAN WELL USA, INC.**  
Tel: 510-683-8886 Fax: 510-683-8899  
website: [www.meanwellusa.com](http://www.meanwellusa.com)

section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy



**TEXAS INSTRUMENTS**  
Texas Instruments



**YUYANG DNU Co Ltd**  
■ See ad on page 4

Edge Electronics Inc



**eldoLED**  
your product | our drive  
eldoLED BV



**Thomas Research Products**  
Innovative & Energy Saving Lighting Controls  
Thomas Research Products  
■ See ad on page 51

ZEISS GmbH  
**ELECTRONIC DESIGN & CONSULTING**  
100 West Electronics  
AC Electronics  
ATG Electronics Corp  
AT&S AG  
BellNett Technologies

Environmentallights.com



**EPtronics Inc**  
■ See ad on page 56

T-Opto, Toyota Tsusho America  
Tridonic



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98



**CEZOS**




**FUTURE Lighting Solutions**  
Making LED Lighting Solutions Simple™  
Future Lighting Solutions  
■ See ad on page 62

Vektrex  
Vigilant Technology Co Ltd  
Wavelength Electronics Inc

Challenge Electronics Ltd  
DigiLighting Inc  
Digitalicht AG  
Dynamic LED Ltd

Global Training Solutions Inc  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
GridPlex Networks



**Premium LED Drivers**

- ✓ Standard and Custom Designs
- ✓ Technology + Performance + Reliability
- ✓ High Efficiency and Power Factor

EPtronics, Inc.  
800 643-0688  
www.EPtronics.com



**Heatron Inc**

IR-TEC International Ltd  
ITACOIL Switching and Resonant pcb  
Transformers



**LEDdynamics Inc**

LEDIKO  
LED Transformations LLC  
Lextar Electronics Corp  
Logolight  
LuxInTec SL  
Mango Electronics  
MAZeT GmbH  
McWong International Inc  
Microlynx Systems Ltd  
National Semiconductor  
Neo-Neon LED Lighting International Ltd  
Nooteboom Elektronica

# LED Driver Solutions for a Broad Range of Applications



## LCD Backlighting

Infotainment  
GPS  
LCD HDTVs  
LCD PC monitors  
DVD players  
Laptops

## Automotive

Daytime running lights  
Stop/turn/tail lights  
Cluster and center stack backlighting  
Interior lights  
Puddle lights

## Illumination and Signals

Headlamps  
(mining, camping)  
Interior decorative and ornamental lighting

## Displays and Signage

Billboards  
Channel letters  
LED video displays  
Message boards and scoreboards  
Emergency lighting and exit signs

Allegro MicroSystems, Inc. offers a growing portfolio of LED drivers used for signs, display backlighting, architectural and automotive lighting applications.

Allegro's process technology and applications expertise has enabled the development of highly integrated LED driver ICs with on-chip FETs and diverse control options, providing flexibility and functionality in a small solution footprint.

Allegro's LED driver portfolio covers a wide variety of topologies, channel counts, output currents and feature sets to help customers optimize their solutions.

## Features within the portfolio of devices include:

- Buck, Boost, Charge Pump, and Linear topologies
- Series and Parallel configurations
- Single and multiple (up to 16) channel outputs
- Output currents from 20 mA up to 3 A per channel
- Multiple intensity control methods including PWM control with high resolution per channel
- Current-control for color calibration (dot correction)
- Open LED and shorted LED detection
- Thermal shutdown and undervoltage lockout
- Automotive voltage and temperature ratings available
- Excellent current matching and accuracy
- Low quiescent current
- Multiple package options



High-Performance Semiconductors

[www.allegromicro.com/promo469](http://www.allegromicro.com/promo469)

115 Northeast Cutoff, Worcester, Massachusetts 01606 USA  
508.853.5000

section 5 | DRIVERS, CONTROL & CONNECTORS

SPONSOR | **ROAL**  
living energy

**NU HORIZONS**  
**ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

**Lumotech**<sup>®</sup>

**Lumotech**  
■ See ad on page 48

**Heraeus**

**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Optotek Ltd

LuxInTec SL  
MSC Vertriebs GmbH  
Neo-Neon LED Lighting International Ltd

Hirose Electric Co Ltd  
Interplex Engineered Products  
LVC Connectors Inc  
Molex

**ORB**  
optronix

**Orb Optronix Inc**  
■ See ad on page 35

**NU HORIZONS**  
**ELECTRONICS**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

**optocore**

**Optocore Ltd**

Power Vector  
Products with Passion

Power Sources Unlimited  
SoundOff Signal

Positronic Industries  
Wessel LED Lighting Systems  
World of Lights LED Solutions Inc  
Wurth Electronics Midcom Inc  
Zierick Manufacturing Corp

**RECOM**

**RECOM Power Inc**  
■ See ad on page 49

**CONNECTORS & CABLING**

**CONNECTORS & CABLES**

Advanced Interconnections Corp  
Allied Electronics  
Amphenol Industrial Operations

**MOUNTING SYSTEMS**

Amphenol Industrial Operations

**ROAL**  
living energy

**ROAL Electronics SpA**  
■ See ad on page 46

**Amphenol LTW**

**Amphenol LTW Technology Co Ltd**

**Amphenol LTW**

**Amphenol LTW Technology Co Ltd**

Sagitario Lighting SLU  
Solid State LED Lighting  
Sparkle Power Inc  
Super Service System  
Synapse Wireless Inc  
TPL Vision

Aries Electronics Inc  
Arrow Electronics EMEA  
AVX Corp  
BJB GmbH & Co KG

Arroyo Instruments  
BJB GmbH & Co KG

**UL**

**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

**carclo**  
technical plastics

**Carclo Technical Plastics Ltd**  
■ See ad on page 30

**carclo**  
technical plastics

**Carclo Technical Plastics Ltd**  
■ See ad on page 30

Cepoint Networks LLC  
Digi-Key Corp

Visual Interactive Ltd  
West Bank Engineering Consultancy Ltd

CUI Inc  
Digi-Key Corp  
Dynamic LED Ltd  
Eco Marketing  
Edge Electronics Inc

**Farnell**

**Farnell**

**ELECTRONIC LOADS**

Allied Electronics  
ATG Electronics Corp  
Cooper Controls  
**EBV Elektronik**  
■ See ad on page 101  
ITACOIL Switching and Resonant pcb  
Transformers

**Farnell**

**Farnell**

**proto labs**<sup>®</sup>  
Real Parts. Really Fast.™

**Proto Labs Inc**  
■ See ad on page 37

FiberSavvy.com  
Global Training Solutions Inc

## alpha® led technologies



Alpha's LED materials technology brings value to the LED Market by:

- Increasing efficiency and brightness
- Increasing reliability and lifetime
- Reducing cost/lumen

The applications we address include:

- LED die attach and chip-on-board (Level 1)
- Package-on-board assembly (Level 2)
- Luminaire board assembly and interconnect (Level 3)
- Power driver and control system board assembly (Levels 4 and 5)

Alpha offers the following products for LED applications:

- ALPHA® Lumet™ Solder Paste with SAC and MAXREL™ alloys
- ALPHA® Cored Solder Wire
- ALPHA® Exactalloy® MAXREL™ Solder Preforms
- ALPHA® SACX Plus® Low Silver Bar Solder Alloy
- ALPHA® Argomax™ Sintered Silver Products
- ALPHA® Atrax™ Conductive Adhesives.

For more information go to

[www.alpha.cooksonelectronics.com/Markets/LED](http://www.alpha.cooksonelectronics.com/Markets/LED).

Or, send an email to

[alphaledtechnologies@cooksonelectronics.com](mailto:alphaledtechnologies@cooksonelectronics.com).

alpha®  
LED Technologies



Where do **specialty**  
chipmakers find the **best solutions?**

**Plasma-Therm, of course.**

When you need help overcoming technical hurdles and bringing your latest ideas to fruition, come to Plasma-Therm. Not only will you get solutions custom-tailored to meet your specific needs, but you will also benefit from our breadth of experience, leading-edge technology and innovative thinking. For 35 years we've been enabling Specialty Chipmakers to extend the limits of what is possible. Bring us your challenges and together, we'll redefine the boundaries.

 **Plasma-Therm**  
A LEADING SUPPLIER OF PLASMA PROCESS EQUIPMENT

Advanced RIE, CVD, ICP  
for Research & Production

**plasmatherm.com**  
**sales@plasmatherm.com**  
**+1 727 577 4999**

# SECTION 6

# LEDs MAGAZINE

## CHIP DESIGN & MANUFACTURING

### CHIP DESIGN & MANUFACTURING

#### CHIP PROCESSING EQUIPMENT

Axic Inc  
Capovani Brothers Inc  
Comdel Inc  
Eulitha AG  
Evatec Ltd  
JP Sercel Associates Inc (JPSA)  
KLA-Tencor Corp  
Micro Modular System  
MKS Instruments Inc



**Nordson ASYMTEK**

Obducat Technologies AB  
Opto System Co Ltd  
PEER Group



**Plasma-Therm**  
■ See ad on page 60

Trion Technology  
VAT



**Veeco Instruments Inc**

#### CHIP SEPARATION EQUIPMENT

ALSI - Advanced Laser Separation International  
NV  
Haiku Tech Inc  
JP Sercel Associates Inc (JPSA)  
Opto System Co Ltd  
PEER Group

### EPITAXIAL GROWTH CHEMICALS AND GASES

ESPprosearch  
Linde Electronics & Specialty Gases  
Saint-Gobain Ceramic Materials

### EPITAXIAL GROWTH SYSTEMS & SOFTWARE

AIXTRON SE  
Capovani Brothers Inc  
PEER Group  
PLANSEE SE



**Veeco Instruments Inc**

### EPITAXIAL WAFERS

Epistar Corp  
E Wave Corp  
The Fox Group Inc  
Linde Electronics & Specialty Gases  
Marktech Optoelectronics  
Nitride Crystals Inc  
Saint-Gobain Ceramic Materials  
Taiwan Oasis Technology Co Ltd

### PHOTONIC CRYSTAL MANUFACTURING EQUIPMENT

Comdel Inc  
Elmet Technologies  
Eulitha AG  
Moltun International  
Obducat Technologies AB  
PEER Group



**Plasma-Therm**  
■ See ad on page 60

### WAFER CHARACTERIZATION EQUIPMENT

Axic Inc  
Capovani Brothers Inc  
Comdel Inc  
Keithley Instruments Inc  
KLA-Tencor Corp  
LayTec AG  
Logitech Ltd  
Moltun International  
Opto System Co Ltd  
PEER Group  
Rudolph Technologies Inc  
SemiProbe  
Telops Inc  
Trion Technology



**Veeco Instruments Inc**

### WAFERS & SUBSTRATES (SAPPHIRE, SIC, GAAS, ALN, ZNO)

Accuratus Corp



**Cree Inc**  
■ See ad on back cover

Elmet Technologies  
Fairfield Crystal Technology  
Jiaozuo City Crystal Photoelectric Material  
Linde Electronics & Specialty Gases  
Logitech Ltd  
Moltun International  
Nitride Crystals Inc  
Optical Semiconductors Inc  
PLANSEE SE



Shops and Hospitality



Industry



Office



Outdoor

# Accelerate Your Time To Market

Expedite your next project with Future Lighting Solutions. From LUXEON® LEDs, optics, drivers or heatsinks to fully integrated or custom solutions, we have the products, tools and knowledge to help you make the right decisions in specifying your LED lighting system solutions.

**LUXEON LEDs & System Components**



**Integrated Light Engines**



**Modular System Solutions**



**Remote Phosphor Solutions**



**Contact Us**

**NORTH AMERICA**  
1-888-LUXEON2  
Americas@FutureLightingSolutions.com

**EUROPE, MIDDLE-EAST, AFRICA**  
00-800-44FUTURE  
Europe@FutureLightingSolutions.com

[www.FutureLightingSolutions.com](http://www.FutureLightingSolutions.com)

**ASIA PACIFIC**  
+800-Lumileds  
Asia@FutureLightingSolutions.com

**JAPAN**  
+81-0120-667-013  
Japan@FutureLightingSolutions.com





# SECTION 7

# LEDs MAGAZINE

## DISTRIBUTORS

### COMPONENT DISTRIBUTORS (LEDS, DRIVERS, MODULES ETC)



**Aeon Lighting Technology Inc**  
■ See ad on page 27

All Brite International Co Ltd  
Allied Electronics

## Amphenol LTW

Amphenol LTW Technology Co Ltd

AppLED BV



**ARROW ELECTRONICS**  
Arrow Electronics Inc

Arrow Electronics EMEA  
Bazi (Thailand) Co Ltd  
BJB GmbH & Co KG  
BMT Group  
ChromeLED Corp  
Dicrom Electronica SL  
Digi-Key Corp  
Dominio LED  
**EBV Elektronik**  
■ See ad on page 101  
Edge Electronics Inc  
FSP Group USA



**Future Lighting Solutions**  
■ See ad on page 62

**GRE Alpha Electronics Ltd**  
■ See ad on page 18




**KLUS**

LEDIKO  
LED Lighting Power Supplies



**Nu Horizons Electronics**  
■ See ad on page 15

Outwater Plastics Industries Inc  
Pacer International  
Power Sources Unlimited  
San Francisco Circuits



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Over  
**110,000 hours of**  
**ENERGY STAR®**  
qualifying  
certification  
services.

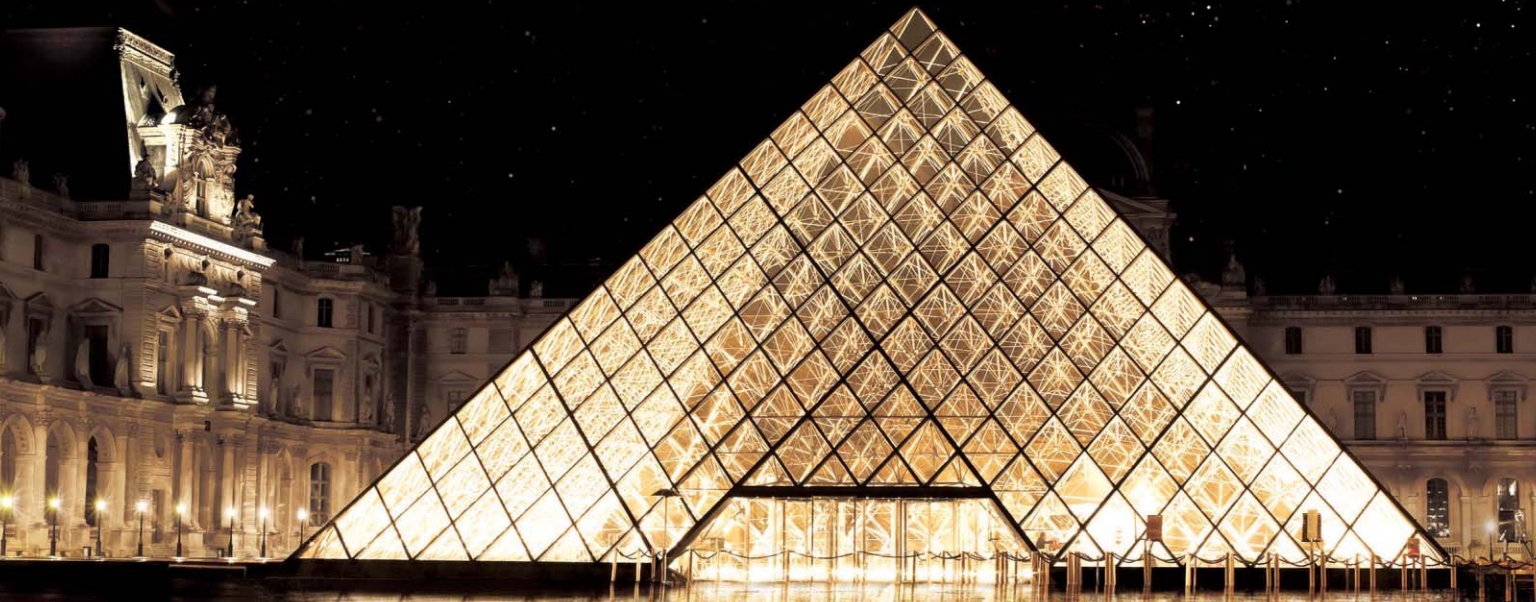


Contact us today to learn more about our expert guidance  
and the EPA-recognized StarGuard® Certification Program.

**(717) 932-8500**  
[www.keystonecerts.com](http://www.keystonecerts.com)

**TOSHIBA**  
Leading Innovation >>>

# Toshiba LEDs illuminate the splendours of the Louvre.



Pyramide du Louvre - Architecte I.M. PEI

When one of the world's most historic art museums decided to embrace the future by installing ultra energy-efficient lighting, Toshiba were grateful for the opportunity to become partners in ushering in a new era.

It's a masterstroke combining Toshiba's leading innovation in LED technologies with the Louvre's steadfast passion for maintaining the cultural arts and heritage.

A lighting project of unprecedented scale and importance for both Toshiba and The Louvre Museum,

some 3,200 Toshiba LED devices will greet the 8.5 million annual visitors at the entrance with the same intrinsic warm evening lighting ambience that the national landmark is renowned for.

For Toshiba, it's a great opportunity to demonstrate how our ultra-efficient LED solutions can provide superior energy savings by up to 73%\* compared to traditional incandescent lighting, while offering lighting that lasts several times longer. What's more, the benefits are beyond just ecological: Toshiba LEDs afford a customised on-site installation and

simplified maintenance.

For over 120 years, Toshiba have appreciated how lighting affects people on an emotional and even cultural level. As one of the world's foremost eco-companies, illuminating the Louvre is just one example of how Toshiba take a proactive approach towards creating real value and promoting lifestyles in harmony with the Earth.

\*Comparison between current xenon lighting system (4500 units, consumed power of 392,000W) and Toshiba LED lighting system (3200 units, consumed power of 105,000W).



<http://www.toshiba.co.jp/lighting/about/louvre.htm>

Representing Toshiba's  
environmental commitment



# SECTION 8

# LEDs MAGAZINE

## LED LIGHTING

Section sponsor:

**TOSHIBA**  
Leading Innovation >>>

### GENERAL LIGHTING

#### CUSTOM LUMINAIRE MANUFACTURING

Adept Optical



**Aeon Lighting Technology Inc**  
■ See ad on page 27

ALANOD Aluminium  
All Brite International Co Ltd  
ALLEDS Lighting Corp



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
ATG Electronics Corp  
Beacon Products  
BE Lite Technologies  
Benled Lighting Group  
BH Design Plus  
Bingk LED Technology India



**Brilliant Electronic Systems Ltd**

CerFlex International  
Cerno  
Challenge Electronics Ltd  
Clean Light Green Light

## ColorStars

**Color Stars Inc**  
■ See ad on page 83

CoolLED Ltd  
CyberBiota Inc  
Del International  
Dellux International Inc  
Design LED Products  
Diana Electronic-Systeme GmbH  
DigiLighting Inc  
D-LED Illumination Technologies  
Dominio LED  
DongFang Bros Electronic Co Ltd  
Downey+Rippe  
Eclipse Lighting Inc  
Edlux Luminaire  
Emergence Technology Consultants LLC  
Eneltec Group  
EO Lighting  
ESPprosearch  
EuLED Ltd

## EVERLIGHT

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fa GK Technik  
Fiberdyne Energy/Edison LED  
Firefly Technology Corp



**Fusion Optix**  
■ See ad on page 32

Future Energy Solutions  
Genesis LED Solutions

**GRE Alpha Electronics Ltd**  
■ See ad on page 18



**Heatron Inc**

## Heraeus

**Heraeus Materials Technology GmbH & Co KG**  
■ See ad on page 41

Hotbeam  
Illumination Optics Inc  
Impact Lighting Inc  
IST Ltd  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
Joe Simiriglio JR t/a Frontier LED Products  
Juice Technology Ltd

## KHATOD®

LENSES FOR POWER LED

**Khatod Optoelectronic**



**KLUS**



**Konica Minolta Sensing Americas Inc**

LED Concepts

section 8 | **LED LIGHTING**

**SPONSOR | TOSHIBA**  
Leading Innovation >>>



**LEDdynamics Inc**

Ledionopto Lighting Inc



**LED Linear GmbH**  
■ See ad on page 69

LEDnovation Inc  
LED One (Hangzhou) Co Ltd  
LEDs N Solar  
LEDworx GmbH  
Lighthouse WorldWide LLC  
Light Solution  
Ligitek Electronics Co Ltd  
Lumoluce  
Mango Electronics  
Motif Architectural Lighting  
Nanker LED Lighting Ltd  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
Optical Illumination Corp



**Optocore Ltd**

Opto Tech Corp  
Philips Hadco  
Philips Hanover Lantern  
PicusLED  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Rincker Productions  
S2 Innovative Products Group Ltd  
S3J Electronics LLC  
Sagitario Lighting SLU  
SAKMA Electronica Industrial SA  
SATHEA  
Selectronic  
Shanghai Yaming-Lighting Co Ltd  
Shenzhen Eastar Electronic Co Ltd  
Shenzhen Ledia Lighting Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Smart Technologies Electronics Ltd  
Spark LED Lighting (HK) Co Ltd  
Spring City Electrical Manufacturing  
Sunlite411 Inc  
Tasca  
Tecartex Digital Solutions SL  
Tepcomp Oy  
Tokistar Lighting Inc



**Top Energy Saving System Corp (TESS)**

T-Opto, Toyota Tsusho America  
Traxon Technologies Ltd  
Trilux LED Lighting Industry Corp  
UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp



**USHIO America**

Verbatim GmbH  
Visionaire Lighting  
Visual Interactive Ltd  
WhiteOptics




**YUYANG DNU Co Ltd**  
■ See ad on page 4

YYZ Systems Inc  
ZEISST GmbH  
Zetamar Elektronik Tic Ltd Sti  
Zydoled

**EMERGENCY & SECURITY LIGHTING**

Aladdin Lighting Technologies Inc  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Andy Optoelectronic Co Ltd  
ATG Electronics Corp  
Beacon Concepts  
Bingk LED Technology India  
Carmanah Technologies Corp  
Chloride Systems  
Del International  
e-conolight  
[TheElectricWeb.com](http://TheElectricWeb.com)  
EO Lighting  
Evluma  
Firefly Technology Corp  
Fobsun Electronics Ltd  
Future Energy Solutions



**Global Lighting Technologies**  
■ See ad on page 71




**Heatron Inc**

High Power Lighting Corp  
Illumination Optics Inc




**Innovations in Optics Inc**

i-vision Lighting Solutions Ltd  
Kara Jalmarit International Ltd  
LED Emerald  
LEDs N Solar  
LEDtronics Inc  
LEDVista Ltd  
LightGuard  
Ligitek Electronics Co Ltd  
Lingshan Trading Co Ltd  
Lumoluce  
Luums International BV



**Lynk Labs Inc**  
■ See ad on page 6

McWong International Inc  
Nanker LED Lighting Ltd  
Neo-Neon LED Lighting International Ltd  
NET LED Lighting



**Philips Emergency Lighting**

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Smart Technologies Electronics Ltd  
Spark LED Lighting (HK) Co Ltd

[www.osram-os.com/oslon-square](http://www.osram-os.com/oslon-square)

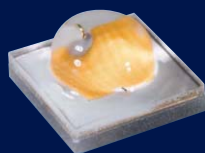
Maximum flexibility.  
Minimum size.  
OSLON<sup>®</sup> Square.

OSRAM  
**LED**  
CREATING TOMORROW



**The perfect LED solution for indoor, outdoor and compact designs**

With a maximum driving current of 1.5A, a broad range of color temperatures and color rendering indexes, OSLON<sup>®</sup> Square opens up new opportunities in indoor lighting. Thanks to its long lifetime, extremely robust design and an impressive efficacy OSLON<sup>®</sup> Square is also perfect for outdoor lighting – even under the harshest conditions. With its footprint of only 3 mm × 3 mm it provides greater freedom for creating compact and efficient designs.



**OSRAM**  
Opto Semiconductors

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
Urban Solar Corp  
West Bank Engineering Consultancy Ltd

**INDOOR: COLOR-CONTROLLED LUMINAIRES**

ALLEDS Lighting Corp  
Armocost Lighting  
ATG Electronics Corp  
Atmos Lighting Ltd  
Barthelme LED Solutions  
Bazi (Thailand) Co Ltd



**Beautiful Light Technology Corp**  
■ See ad on page 79

Benled Lighting Group  
Bingk LED Technology India



**Color Stars Inc**  
■ See ad on page 83

Del International  
Delray Lighting Inc  
Design LED Products  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
Elumina Technology Inc  
Eneltec Group  
EO Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

GlacialLight  
Green Lighting LED  
Hybrid Integrated Circuits Ltd (HIC)  
Impact Lighting Inc  
IST Ltd  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
The LED Advocacy Group  
Ledionopto Lighting Inc  
LED Retro8  
LEDs N Solar  
LEDvista Ltd  
Lighting and Production Resources  
Light Ocean Technology Corp  
Liteon France  
Logolight  
Lumenpulse  
LuxInTec SL  
Neo-Neon LED Lighting International Ltd  
opsira GmbH  
Opto Tech Corp  
PowerLED Lighting Corp



**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Senso Lighting Inc  
Shenzhen Eastar Electronic Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Sielement LED Lights  
**Signcomplex Ltd**  
■ See ad on page 75  
Solas Lights for Life Ltd  
Solid State Luminaires  
Spark LED Lighting (HK) Co Ltd  
TOP LED Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98


UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
Wessel LED Lighting Systems

**INDOOR: DESK/TASK LIGHTING**



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Aladdin Lighting Technologies Inc  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Armocost Lighting  
ATG Electronics Corp  
Beadlight  
Bingk LED Technology India  
BL2BL  
C Crane Co Inc  
Cerno  
Cool-View  
Del International  
Delray Lighting Inc  
DigiLighting Inc  
Diogen Lighting  
D-LED Illumination Technologies  
Eden Park Illumination  
Energyled Corp  
Environmental LED  
EnvironmentalLights.com  
EO Lighting  
e3 (Ethos Ethical Energy)



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fiberdyne Energy/Edison LED  
Fobsun Electronics Ltd



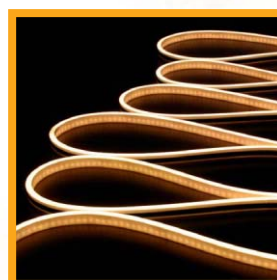
**Fusion Optix**  
■ See ad on page 32

Gemma Lighting Ltd  
GlacialLight  
GloPlus  
Green Supply

●●● LED Linear  
linear lighting solutions

interior  
innovation  
award  
2011  
Winner

Designpreis  
Deutschland  
2011  
SILBER



VarioLED Flex  
VENUS

[www.led-linear.com](http://www.led-linear.com)

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**Heatron Inc**

Hotbeam  
House Lighting Co Ltd  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
Kingstates LED Light




**KLUS**



**Konica Minolta Sensing Americas Inc**

The LED Advocacy Group  
LED Emerald  
LED Grow Master Global LLC  
Ledionopto Lighting Inc  
LED Retro8  
LEDs N Solar  
LEDvista Ltd  
Lextar Electronics Corp  
Lighting and Production Resources  
Light Ocean Technology Corp  
Liteon France  
LittleFootprint Lighting Inc



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Neo-Neon LED Lighting International Ltd  
NET LED Lighting  
Philips Lighting Co



**Proto Labs Inc**  
Real Parts. Really Fast.™  
■ See ad on page 37

Putian International Co  
Quasar Light Co Ltd

Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Shanghai Yaming-Lighting Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
SSLI Ltd  
Stanley Electric Co Ltd  
Tasca  
TEAM Instruments Co Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Verbatim GmbH  
Visual Dimensions NA Inc  
Wamco Inc  
Wellypower Optronics Co  
Zhejiang Jinzhong Machinery & Electronic Technology Co Ltd


**INDOOR: RECESSED DOWNLIGHTS**

3elamp



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Amerlux  
Andy Optoelectronic Co Ltd  
AppLED BV  
Apple Lighting Corp  
Archipelago Lighting  
Armacost Lighting  
Astra Industries SAL  
ATG Electronics Corp  
Atmos Lighting Ltd  
BC Renewable Energy



**Beautiful Light Technology Corp**  
■ See ad on page 79

Benled Lighting Group  
Bingk LED Technology India  
BMD Lighting Co Ltd



**Brillianz Electronic Systems Ltd**

Carson Technology Co Ltd  
CA Supply Co  
Chen Ming Industrial Co Ltd  
Clean Light Green Light



**Color Stars Inc**  
■ See ad on page 83

CRS Electronics Inc  
Danson Electronics Ltd  
Del International  
Delneo sprl  
Delray Lighting Inc  
Denggang Lighting Technology Co Ltd  
Designplan Lighting Inc  
Diamond LED Lighting  
DigiLighting Inc  
Diogen Lighting  
Direct Trade Supplies  
D-LED Illumination Technologies  
Dynamic LED Ltd  
Earthmate  
Eclipse Lighting Inc



**Ecomaa Lighting Inc**

e-conolight  
Eden Park Illumination  
Edlux Luminaire  
E-Lite OptoTech Co Ltd  
Elumina Technology Inc  
Eneltec Group  
Energyled Corp  
enLux Lighting



**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | LED LIGHTING

Environmental LED  
EnvironmentalLights.com  
EO Lighting  
e3 (Ethos Ethical Energy)  
Etrilum

**EVERLIGHT**

Everlight Electronics Co Ltd  
■ See ad on page 11

Fawoo Technology Co Ltd  
Fiberdyne Energy/Edison LED  
Firefly LED Lighting Inc  
Fobsun Electronics Ltd

**FRONTAN D**  
Technology

FrontAnD Technology  
■ See ad on page 91

**Fusion Optix**

Fusion Optix  
■ See ad on page 32

**FUTURE**  
Lighting Solutions  
Making LED Lighting Solutions Simple™

Future Lighting Solutions  
■ See ad on page 62

Fuzhou Morstar Electric Technology Co Ltd  
Gautam Polymers  
GlacialLight

**GLOBAL LIGHTING**  
TECHNOLOGIES INC.

Global Lighting Technologies  
■ See ad on page 71

Green Creative LLC  
Green Supply

**Halco**  
LIGHTING TECHNOLOGIES

Halco Lighting Technologies

HBA Tech Ltd

**HEATRON**

Heatron Inc

Helios LED Lightronics Pvt Ltd  
Hokuriku Malaysia Sdn Bnd  
Hotbeam  
House Lighting Co Ltd  
Hybrid Integrated Circuits Ltd (HIC)  
Illumination Optics Inc  
Innox Pte Ltd  
Innovative LED Lighting Inc  
IST Ltd  
ITC Inc  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
JD Greentech-Global Inc  
Jiashan Sunovo Lighting Technology Co Ltd  
Kara Jalmarit International Ltd

**KHATOD**  
LENSES FOR POWER LED

Khatod Optoelectronic

**KLUS**

KLUS

Lambert Lighting Technology Co Ltd  
Ledionopto Lighting Inc  
LEDKE Technology Co Ltd  
LED Lights Canada  
LED Light Works  
The LED Shop  
LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
Ledway  
LEDworx GmbH  
Lextar Electronics Corp  
Lighting and Production Resources  
Lighting Science Group Corp  
Light Ocean Technology Corp  
Lingshan Trading Co Ltd  
Liteon France  
Littronics International Inc  
Lumenarex Inc  
Lumoluca  
Lutron Electronics  
Luums International BV  
LuxInTec SL

**GLOBAL LIGHTING**  
TECHNOLOGIES INC.

GLT. The Edge in  
LED-Based Illumination  
and Backlighting.

General Illumination



LCD Backlighting



Keyboards/Keypads



Touch Panel Illumination

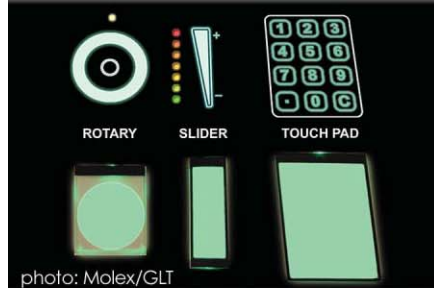


photo: Molex/GLT

440-922-4584 • info@glthome.com  
www.glthome.com

Visit us in 2012 at  
Strategies in Light (Feb. 7-9)  
and LightFair (May 9-11)

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc



**Matrix Lighting Ltd**  
■ See ad on inside front cover

Medical Lighting Systems  
Mica Lighting Co Inc  
Motif Architectural Lighting  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd



**Nexxus Lighting Inc**

OMS  
Philips Lighting Co  
Philips Lighting UK  
PLANETech International  
PowerLED Lighting Corp



**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RedBird LED  
Regal Lighting Designs  
RenovaSolar Lda  
Rui Meng Electronics Co Ltd  
Sagitario Lighting SLU  
SchahLED Lighting

Selectronic  
Senso Lighting Inc  
Shanghai Yaming-Lighting Co Ltd



**Shanxi Guangyu LED Lighting Co Ltd**

Shenzhen Bright Lighting Technology  
Shenzhen Chenze SSL Co Ltd  
Shenzhen Fujisunwah Electronic Technology Co Ltd  
Shenzhen Ledia Lighting Co Ltd  
Shenzhen Zhongtian Lighting Co Ltd  
Sielement LED Lights  
**Signcomplex Ltd**  
■ See ad on page 75  
Smartgreen Technology Co Ltd  
Smart Technologies Electronics Ltd  
Solas Lights for Life Ltd  
Solid State Luminaires  
Spark LED Lighting (HK) Co Ltd  
SSLI Ltd  
Stellaray Technology Ltd  
Sunlite411 Inc

**PROLED®**

VISIT US AT [WWW.PROLED.COM](http://WWW.PROLED.COM)



Large range of LED products




**MBNLED TOUCH CONTROL LCD RGB DMX**

**MBN GmbH**  
Balthasar-Schaller-Str. 3  
86316 Friedberg · Germany  
Tel. +49/8 21/6 00 99-0  
Fax +49/8 21/6 00 99-99  
E-Mail [info@proled.com](mailto:info@proled.com)

[www.proled.com](http://www.proled.com)

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | **LED LIGHTING**



**SUNON**<sup>®</sup>  
Sunonwealth Electric Machine Industry Co Ltd  
■ See ad on page 1

Switch Lighting  
TEAM Instruments Co Ltd



**Tempo Industries**

ThermoKing Technology Int'l Corp  
Thinkwise Lighting



**TESS**  
Top Energy Saving System Corp.  
**Top Energy Saving System Corp (TESS)**

Toshiba Corp New Lighting Systems Div



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO



**Verbatim Americas LLC**

Vexica Technology Ltd  
Visual Dimensions NA Inc  
Visual Interactive Ltd  
Wamco Inc  
Watt Works Inc  
WhiteOptics



**YUYANG DNU Co Ltd**  
■ See ad on page 4

ZEISST GmbH  
Zetamar Elektronik Tic Ltd Sti  
Zhejiang Jinzhong Machinery & Electronic  
Technology Co Ltd  
Zhuhai Mingyuan Lighting Co Ltd


**INDOOR: SPOTLIGHTS & PENDANT LUMINAIRES**

3elamp  
Acoya Illumination  
Advanced Thermal Devices Inc



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Amerlux  
Apple Lighting Corp  
Arani  
Archipelago Lighting  
Astra Industries SAL  
ATG Electronics Corp



**Beautiful Light Technology Corp**  
■ See ad on page 79

Bingk LED Technology India  
BL2BL



**Brillianz Electronic Systems Ltd**

Brtech Lighting (Dongguan) Co Ltd  
Carson Technology Co Ltd  
C Crane Co Inc  
Cerno  
Chen Ming Industrial Co Ltd  
ChiHua Lighting Technology Co Ltd  
ChinaSunshiny GreenPower Lighting Technology  
Co Ltd  
Clean Light Green Light

CraLux Lighting  
Danson Electronics Ltd  
Del International  
Delneo sprl  
Delray Lighting Inc  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
DMX LED Lights  
Dynamic LED Ltd  
Eclipse Lighting Inc



**Ecomaa Lighting Inc**

Eden Park Illumination  
Edge Lighting  
Edlux Luminaire  
E-Lite OptoTech Co Ltd  
Elkays Electronics  
Elumina Technology Inc  
Energyled Corp  
Environmental LED  
EO Lighting  
e3 (Ethos Ethical Energy)  
Etrilum  
Everbright Lights Inc



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fawoo Technology Co Ltd  
Firefly LED Lighting Inc  
Fobsun Electronics Ltd  
Focus LLC  
Foxsemicon Integrated Technology Inc



**FrontAnD Technology**  
■ See ad on page 91



**Fusion Optix**  
■ See ad on page 32

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62

Fuzhou Morstar Electric Technology Co Ltd  
Gemma Lighting Ltd  
Genesis LED Solutions  
Geospec Enterprises  
GlacialLight  
GloPlus  
Green Creative LLC



**Halco**  
LIGHTING TECHNOLOGIES

**Halco Lighting Technologies**


HBA Tech Ltd



**HEATRON**

**Heatron Inc**

Hotbeam  
House Lighting Co Ltd  
Hybrid Integrated Circuits Ltd (HIC)  
Illumination Optics Inc  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
JD Greentech-Global Inc  
Jiashan Sunovo Lighting Technology Co Ltd  
Kara Jalmarit International Ltd  
Lambert Lighting Technology Co Ltd  
[LEDcentre.uk.com](http://LEDcentre.uk.com)  
LED Emerald  
Ledionopto Lighting Inc  
LEDKE Technology Co Ltd  
LED Light Works  
LED One (Hangzhou) Co Ltd  
LEDs N Solar  
LEDvista Ltd  
Ledway  
LEDworx GmbH  
Lighting and Production Resources  
Lighting Orient Co Ltd  
Ligitek Electronics Co Ltd  
Lingshan Trading Co Ltd  
Liteon France  
Lumenarex Inc  
Lumenpulse  
LumiCe Co Ltd  
Lumoluca  
Luums International BV  
LuxinTec SL



**LYNK LABS**

**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc



**VIRIBRIGHT**  
The bright side of light

**Matrix Lighting Ltd**  
■ See ad on inside front cover


Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
OMS  
ONLY Technology LTD  
OPTILED Lighting  
Optogan GmbH  
PLANETech International  
PowerLED Lighting Corp



**PROLED**

**PROLED - MBN GmbH**  
■ See ad on page 72

Putian International Co  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Rui Meng Electronics Co Ltd  
Sagitario Lighting SLU  
Senso Lighting Inc  
Shanghai Yaming-Lighting Co Ltd




**GYLED**

**Shanxi Guangyu LED Lighting Co Ltd**

Shenzhen Bright Lighting Technology  
Shenzhen Chenze SSL Co Ltd  
Shenzhen Eastar Electronic Co Ltd  
Shenzhen Fujisunwah Electronic Technology Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Ledia Lighting Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Zhongtian Lighting Co Ltd  
Sielement LED Lights  
**Signcomplex Ltd**  
■ See ad on page 75  
Silvermere Group  
Smart Technologies Electronics Ltd  
Solas Lights for Life Ltd  
Solmadis Inc

Spark LED Lighting (HK) Co Ltd  
SSLI Ltd  
Stellaray Technology Ltd



**SUNON**

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

ThermoKing Technology Int'l Corp



**TESS**  
Top Energy Saving System Corp.

**Top Energy Saving System Corp (TESS)**

Trilux LED Lighting Industry Corp



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Verbatim GmbH  
Visual Dimensions NA Inc  
Zetamar Elektronik Tic Ltd Sti  
Zhejiang Jinzhong Machinery & Electronic  
Technology Co Ltd  
Zhuhai Mingyuan Lighting Co Ltd


**INDOOR: UNDER-CABINET  
LIGHTING**



**ALT**

**Aeon Lighting Technology Inc**  
■ See ad on page 27

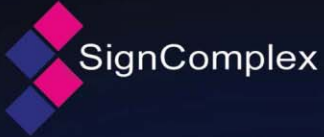
Allied Electronics



**AMERICAN BRIGHT  
OPTOELECTRONICS CORP.**

**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
Architectural FX Ltd  
ATG Electronics Corp  
Atmos Lighting Ltd



*we bring innovation and give impression*



**12W LED Garden Lamp**



**150W LED Wall Washer**



Tel: +86 755 2760 8650 Fax: +86 755-27608651 [www.signcomplex.com](http://www.signcomplex.com) [sales@signcomplex.com](mailto:sales@signcomplex.com)

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | **Leading Innovation >>>**



**Beautiful Light Technology Corp**  
■ See ad on page 79

Bingki LED Technology India



**Brilliantz Electronic Systems Ltd**

CA Supply Co  
C Crane Co Inc



**Color Stars Inc**  
■ See ad on page 83

CYRON Lighting  
Danson Electronics Ltd  
Del International  
Delta Light  
Denggang Lighting Technology Co Ltd  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies



**Ecomaa Lighting Inc**

Eden Park Illumination  
Edge Lighting  
Edlux Luminaire  
Elumina Technology Inc  
Energyled Corp  
Energy Tech Solutions LLC  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting  
Eternaleds Inc  
Everbright Lights Inc  
Eyeleds International  
Fawoo Technology Co Ltd  
Firefly Technology Corp  
Fobsun Electronics Ltd  
Focus LLC



**FrontAnD Technology**  
■ See ad on page 91



**Fusion Optix**  
■ See ad on page 32

GlacialLight



**Global Lighting Technologies**  
■ See ad on page 71

Green 4 All Energy Solutions



**Heatron Inc**

Hotbeam  
Illumination Optics Inc  
Innovative LED Lighting Inc  
International Light  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
JGA Associates/Bulbwizards  
Kara Jalmarit International Ltd




**Khatod Optoelectronic**



**KLUS**

[LEDcentre.uk.com](http://LEDcentre.uk.com)  
[ledgrowlight-hydro.com](http://ledgrowlight-hydro.com)  
LED Grow Master Global LLC  
LED-LES  
LED Lighting Inc

LED Power Inc  
LED Retro8  
LEDs N Solar  
LEDvista Ltd  
Leotek Electronics USA Corp  
Light Emitting Designs LLC  
Lighthouse WorldWide LLC  
Lighting and Production Resources  
Light Solution  
Liteon France  
Lotus LED Lights  
Lumenpulse  
Lumoluce  
Luums International BV  
LuxInTec SL



**Lynk Labs Inc**  
■ See ad on page 6

Mica Lighting Co Inc  
Motif Architectural Lighting  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd



**Nexus Lighting Inc**

OMS  
Optical Illumination Corp  
Outwater Plastics Industries Inc  
PowerLED




**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
S2 Innovative Products Group Ltd  
Sagittario Lighting SLU  
Senso Lighting Inc  
Shenzhen Bright Lighting Technology  
Shenzhen Ledia Lighting Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd  
Sunlite411 Inc

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | **LED LIGHTING**



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Switch Lighting  
Tasca



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
usLEDsupply  
Visual Dimensions NA Inc  
Wessel LED Lighting Systems

**LED REPLACEMENT LAMPS  
(FLUORESCENT)**

3elamp  
AAA OEM & ODM Ltd  
AC Electronics  
Acoya Illumination



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Aladdin Lighting Technologies Inc  
Alder Optomechanical Corp  
ALLEDs Lighting Corp  
Allied Electronics  
Andy Optoelectronic Co Ltd  
AppLED BV  
Apple Lighting Corp  
Arani  
Archipelago Lighting  
Armadillo LED  
ATG Electronics Corp  
Bazi (Thailand) Co Ltd  
Bingk LED Technology India  
BMD Lighting Co Ltd  
Carley Lamps  
CA Supply Co  
Catalyst LED's  
Chen Ming Industrial Co Ltd  
ChinaSunshiny GreenPower Lighting Technology Co Ltd  
Clean Light Green Light



**Color Stars Inc**  
■ See ad on page 83

Coyote Marketing LLC  
CRS Electronics Inc  
CyberBiota Inc  
CYRON Lighting  
Dai Shin Technologies Inc  
Danson Electronics Ltd  
Del International  
Denggang Lighting Technology Co Ltd  
DigiLighting Inc  
DongFang Bros Electronic Co Ltd  
Dongguan Jingliang Lighting Factory  
DuraComm Lighting  
Dynamic LED Ltd  
Earth Energy Solutions Group  
Earthmate



**Ecomaa Lighting Inc**

Edlux Luminaire  
[TheElectricWeb.com](http://TheElectricWeb.com)  
Emergence Technology Consultants LLC  
Eneltec Group  
EnergyLED Corp  
EnergyMatrix  
Energy Tech Solutions LLC  
Environmental LED  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting  
Estar LED Light Co Ltd  
ETEC Lighting Co Ltd  
Etrilum  
EuLED Ltd  
Everbright Lights Inc



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fawoo Technology Co Ltd  
Fiberdyne Energy/Edison LED  
Firefly LED Lighting Inc  
Firefly Technology Corp  
Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

Fuzhou Morstar Electric Technology Co Ltd  
GloPlus  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Creative LLC  
Green Performance Lighting  
Green Supply  
HBA Tech Ltd



**Heatron Inc**

Hephas Co Ltd  
Hokuriku Malaysia Sdn Bnd  
Holland Solutions Ltd  
House Lighting Co Ltd  
Innovative LED Lighting Inc  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
Jiashan Sunovo Lighting Technology Co Ltd  
Jireh Optoelectronics  
Kara Jalmarit International Ltd  
Kingstates LED Light  
Lambert Lighting Technology Co Ltd  
Lanzarote LED  
LED Argentina SA



**LEDdynamics Inc**

LED Eco Lights  
[ledgrowlight-hydro.com](http://ledgrowlight-hydro.com)  
LED Grow Master Global LLC  
LED International Lighting Inc  
Ledionopto Lighting Inc  
LEDKE Technology Co Ltd  
LED-LES  
LED Lighting Inc  
LED Light Works  
Led Mode Ltd  
LED Retro8  
LEDS America Inc  
LEDs N Solar  
LED Source  
LEDvista Ltd

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

LED Waves  
Ledway  
Lextar Electronics Corp  
Light Emitting Designs LLC  
Lighting and Production Resources  
Lighting Orient Co Ltd  
LightWild  
Ligitek Electronics Co Ltd  
Lingshan Trading Co Ltd  
Liteon France  
Litronics International Inc  
Lotus LED Lights  
Lumenarex Inc  
Luminarch  
Luums International BV  
Luxon Sp zoo

Putian International Co  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RedBird LED  
Regal Lighting Designs  
RenovaSolar Lda  
Runion Energy Solutions LLC  
S3J Electronics LLC  
Sagitario Lighting SLU  
Seesmart Inc  
Senslite Corp  
Shanghai Neolux LED Lightings Co Ltd  
Shenzhen Bright Lighting Technology  
Shenzhen Chenze SSL Co Ltd  
Shenzhen Fujisunwah Electronic Technology Co Ltd  
Shenzhen Hongxing Lighting Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Ledia Lighting Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Spark Optoelectronics  
Shenzhen Zhongtian Lighting Co Ltd  
Sielement LED Lights  
**Signcomplex Ltd**  
■ See ad on page 75  
Smart Technologies Electronics Ltd  
Solais Lighting Inc  
Solmadis Inc  
Spark LED Lighting (HK) Co Ltd  
Stellaray Technology Ltd  
Stouch Lighting  
Sunenergy1  
Surface Mount Techniques SMT  
Taiwan Oasis Technology Co Ltd

UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd  
UPEC Electronics Corp  
VAOPTO



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Marc LED Ltd



**Matrix Lighting Ltd**  
■ See ad on inside front cover

Metropolitan Energy Service-Gulf Coast LEDs  
Millennium Visual Systems  
MIRROR Lighting Inc  
Nav-comm  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
NET LED Lighting  
Next Generation Lights Inc



**Nexus Lighting Inc**

ONLY Technology LTD  
OPTILED Lighting  
Opulent Technologies Inc  
Philips Lighting Co



**PROLED - MBN GmbH**  
■ See ad on page 72



**Tempo Industries**

ThermoKing Technology Int'l Corp  
Thinkwise Lighting




**Top Energy Saving System Corp (TESS)**

Toshiba Corp New Lighting Systems Div  
Trilux LED Lighting Industry Corp  
Tri-State LED  
Twin Hill Co Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98



**Verbatim Americas LLC**

Vexica Technology Ltd  
Visual Interactive Ltd  
Wellypower Optronics Co  
Wuxi Kinlight Optoelec Technology



**YUYANG DNU Co Ltd**  
■ See ad on page 4


Zhuhai Mingyuan Lighting Co Ltd  
ZMDI - Zentrum Mikroelektronik Dresden

**LED REPLACEMENT LAMPS (INCANDESCENT)**  
AC Electronics



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Alder Optomechanical Corp  
ALLEDS Lighting Corp  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
Apple Lighting Corp  
Arani  
Archipelago Lighting  
ATG Electronics Corp  
Bazi (Thailand) Co Ltd  
BC Renewable Energy



**bltc**

Beautiful Light Technonology Corporation  
Green Technonology of Lightings



**A60 Omni-directional (320°) LED Bulb**

40W / 60W incandescent replacement



**A60 Sno-cone (130°) LED Bulb**

25W / 40W / 60W incandescent replacement



| M TYPE NEW PRODUCTS



| S TYPE NEW PRODUCTS



| T TYPE NEW PRODUCTS



Welcome to visit us

2012 Tokyo Lighting Fair Mar 6~9

2012 Frankfurt Light + Building Apr 15~20

Headquarter:  
TEL:+886-5-2392881  
FAX:+886-5-2392007

Address:No. 16-2, Dingshanmen, Neighbor 12, Jinlan Village,  
Jhongpu Township, Chia-yi, Taiwan.  
Zip code:60665

Sales:sales@bltc.com.tw  
Technical:service@bltc.com.tw  
www.bltc.com.tw

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**Beautiful Light Technology Corp**  
■ See ad on page 79

Bingk LED Technology India  
BL2BL  
BMT Group  
Brtech Lighting (Dongguan) Co Ltd  
Canada LEDS  
C Crane Co Inc



**CEZOS**

ChinaSunshiny GreenPower Lighting Technology Co Ltd  
Clean Light Green Light




**Color Stars Inc**  
■ See ad on page 83

Coyote Marketing LLC  
CraLux Lighting  
CRS Electronics Inc  
CYRON Lighting  
Dai Shin Technologies Inc  
Danson Electronics Ltd  
Del International  
Denggang Lighting Technology Co Ltd  
Diamond LED Lighting  
DigiLighting Inc  
DigitaLicht AG  
Diogen Lighting  
DongFang Bros Electronic Co Ltd  
Dongguan Jingliang Lighting Factory  
Downey+Rippe  
DuraComm Lighting  
Dynamic LED Ltd  
Earth Energy Solutions Group  
Earthmate



**Ecomaa Lighting Inc**



**Edison Opto Corp**  
■ See ad on page 21

Edlux Luminaire  
EE Green Lighting  
Eneltec Group  
Energyled Corp  
Energy Tech Solutions LLC  
enLux Lighting  
Environmental LED  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting  
Estar LED Light Co Ltd  
ETEC Lighting Co Ltd  
Eternaleds Inc  
EuLED Ltd  
Everbright Lights Inc



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fawoo Technology Co Ltd  
Firefly Technology Corp  
Fobsun Electronics Ltd  
Foxsemicon Integrated Technology Inc



**FrontAnD Technology**  
■ See ad on page 91



**Fusion Optix**  
■ See ad on page 32

Future Energy Solutions  
GloPlus  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Creative LLC  
Green Lighting LED  
Green Performance Lighting  
Green Supply



**Halco Lighting Technologies**




**Heatron Inc**

Hephas Co Ltd  
High Power Lighting Corp  
Hokuriku Malaysia Sdn Bnd  
Holland Solutions Ltd  
House Lighting Co Ltd  
Illumination Optics Inc  
Impact Lighting Inc  
Ing Elmar Schrutek  
ITC Inc  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
JD Greentech-Global Inc  
Juice Technology Ltd  
Kara Jalmarit International Ltd  
Kingstates LED Light  
Lambert Lighting Technology Co Ltd  
Lanzarote LED  
LED Argentina SA  
LED Eco Lights  
[ledgrowlight-hydro.com](http://ledgrowlight-hydro.com)  
LED Grow Master Global LLC  
LED International Lighting Inc  
Ledionopto Lighting Inc  
LED-LES  
LED Lights Canada  
LED Light Works  
LEDnovation Inc  
LED One (Hangzhou) Co Ltd  
LEDs America Inc  
The LED Shop  
LEDs N Solar  
LED Source  
LEDtronics Inc  
LEDvista Ltd  
Ledway  
LEDworx GmbH  
Lextar Electronics Corp  
Light Emitting Designs LLC  
Lighting and Production Resources  
Lighting Orient Co Ltd  
Lighting Science Group Corp  
LightWild  
Ligitek Electronics Co Ltd  
Lingshan Trading Co Ltd  
Liteon France  
Litetronics International Inc  
Lotus LED Lights  
Lumenarex Inc

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | LED LIGHTING

Lumicrest Lighting Solutions Inc  
Luminarch  
Lumoluce  
Luums International BV  
LuxInTec SL



**Lynk Labs Inc**  
■ See ad on page 6

Marc LED Ltd



**Matrix Lighting Ltd**  
■ See ad on inside front cover

McWong International Inc  
Metropolitan Energy Service-Gulf Coast LEDs  
Millennium Visual Systems  
MIRROR Lighting Inc  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
NET LED Lighting  
Next Generation Lights Inc



**Nexus Lighting Inc**

ONLY Technology LTD  
Philips Lighting Co  
Phoster Industries  
PLANETech International  
PowerLED Lighting Corp



**PROLED - MBN GmbH**  
■ See ad on page 72

Putian International Co  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Regal Lighting Designs  
RenovaSolar Lda  
Rui Meng Electronics Co Ltd  
Sagitario Lighting SLU  
SchahLED Lighting  
Seesmart Inc  
Selectronic  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111

Shenzhen Fujisunwah Electronic Technology Co Ltd  
Shenzhen Hongxing Lighting Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Lamp Technology Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Zhongtian Lighting Co Ltd  
Sielement LED Lights  
**Signcomplex Ltd**  
■ See ad on page 75  
Smartgreen Technology Co Ltd  
Solais Lighting Inc  
Solais Lights for Life Ltd  
Solmadis Inc  
Spark LED Lighting (HK) Co Ltd  
SSLI Ltd  
Stellaray Technology Ltd  
Taiwan Oasis Technology Co Ltd  
TEAM Instruments Co Ltd  
Thinkwise Lighting



**Top Energy Saving System Corp (TESS)**

Toshiba Corp New Lighting Systems Div  
Trilux LED Lighting Industry Corp  
Tri-State LED  
Twin Hill Co Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd  
UPEC Electronics Corp  
US Eco-Light




**Verbatim Americas LLC**

Verbatim GmbH  
Vexica Technology Ltd  
Wamco Inc  
Zhejiang Jinzhong Machinery & Electronic Technology Co Ltd  
Zhuhai Mingyuan Lighting Co Ltd  
ZMDI - Zentrum Mikroelektronik Dresden

**LIGHTING PROJECT DESIGN & CONSULTING**  
AAA OEM & ODM Ltd  
Adept Optical



**Aeon Lighting Technology Inc**  
■ See ad on page 27



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Astra Industries SAL  
ATG Electronics Corp  
Auctus Lights Pvt Ltd



**Beautiful Light Technology Corp**  
■ See ad on page 79

BE Lite Technologies  
BH Design Plus  
Bingk LED Technology India  
BMT Group  
Carson Technology Co Ltd  
Catalyst LED's  
Cerno  
ChinaSunshiny GreenPower Lighting Technology Co Ltd  
Clean Light Green Light  
Continental Inc  
Cooliance Inc  
CyberBiota Inc  
Del International  
Delneo sprl  
Diana Electronic-Systeme GmbH  
DigiLighting Inc  
DigitaLicht AG  
Dongguan Jingliang Lighting Factory  
Downey+Rippe  
Dynamic LED Ltd  
Earth Energy Solutions Group  
**EBV Elektronik**  
■ See ad on page 101



**Ecomaa Lighting Inc**

Edlux Luminaire  
Eneltec Group  
Energy Tech Solutions LLC  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting  
Estar LED Light Co Ltd

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

EuLED Ltd  
Fawoo Technology Co Ltd  
Fernplas  
Fiberdyne Energy/Edison LED  
Fobsun Electronics Ltd  
FSP Group USA



**Fusion Optix**  
■ See ad on page 32

Future Energy Solutions  
GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Lighting LED  
Haeusermann GmbH



**Heatron Inc**

Helios LED Lightronics Pvt Ltd  
HET LED HUIS  
Holders Components  
Illumination Unlimited USA Inc  
Innovative LED Lighting Inc  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
Juice Technology Ltd



**KLUS**

LED Argentina SA  
LED Emerald  
LEDIKO  
LED International Lighting Inc  
LEDs N Solar  
LED Specialists Inc  
LED Transformations LLC  
Lighting and Production Resources  
Light Ocean Technology Corp  
Light Solution  
LightWild  
Ligitek Electronics Co Ltd  
Liteon France  
Lumex  
Luums International BV  
LuxInTec SL  
Luxon Sp zoo  
Metropolitan Energy Service-Gulf Coast LEDs  
Millennium Visual Systems

MIROR Lighting Inc  
Neo-Neon LED Lighting International Ltd  
Next Generation Lights Inc  
Notis Design  
OMS  
opsira GmbH  
OPTILED Lighting



**Real Parts. Really Fast.™**  
**Proto Labs Inc**  
■ See ad on page 37

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Regal Lighting Designs  
RenovaSolar Lda  
Sagitaro Lighting SLU  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111  
Shenzhen MR Photoelectricity Co Ltd  
Solas Lights for Life Ltd  
Spark LED Lighting (HK) Co Ltd  
Sunenergy1  
Sunna Energy Pvt Ltd  
Sunsify International  
Switch Lighting  
Synapse Wireless Inc  
Tasca  
TEAM Instruments Co Ltd



**Top Energy Saving System Corp. (TESS)**

Tri-State LED  
Twin Hill Co Ltd  
UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp



**USHIO America**

usLEDsupply  
Watt Works Inc  
Wessel LED Lighting Systems


**OUTDOOR: LANDSCAPE LUMINAIRES**

Abacus Lighting Ltd  
Advanced Thermal Devices Inc



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Alliance Optotek Corp  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Amerlux  
Andy Optoelectronic Co Ltd  
APACK Inc  
AppLED BV  
Apple Lighting Corp  
Aquadelight  
Architectural FX Ltd  
ATG Electronics Corp  
Atmos Lighting Ltd  
Beacon Products



**Beautiful Light Technology Corp**  
■ See ad on page 79

BE Lite Technologies  
BH Design Plus  
Bingk LED Technology India  
ChiHua Lighting Technology Co Ltd  
ChinaSunshiny GreenPower Lighting Technology Co Ltd  
Chloride Systems



**Color Stars Inc**  
■ See ad on page 83

Del International  
Denggang Lighting Technology Co Ltd  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
Dongguan Jingliang Lighting Factory  
e-conolight  
Edge Lighting  
Edlux Luminaire  
Environmental LED

# ColorStars®

## LED innovations for 2012

### The R5-Series

### The High-Bay Series



All Dimmable

[www.colorstars.com](http://www.colorstars.com)



**ColorStars®**

**ColorStars Group**  
One Technology Dr., Suite F-213  
Irvine, CA 92618, U.S.A.  
TEL: +(949) 336-6161  
FAX: +(949) 336-6165  
Email: [sales@colorstars.com](mailto:sales@colorstars.com)  
Website: [www.colorstarsgroup.com](http://www.colorstarsgroup.com)

**Color Stars, Inc.**  
10F, No. 566, Jung Jeng Rd., Sindian District  
New Taipei City 23148, Taiwan  
TEL: +886-2-8667-6600  
FAX: +886-2-8667-1400  
Email: [sales@colorstars.com](mailto:sales@colorstars.com)  
Website: [www.colorstars.com](http://www.colorstars.com)

section 8 | **LED LIGHTING**

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

EO Lighting  
Eyeleds International  
Fawoo Technology Co Ltd  
Fernplas  
Fiberdyne Energy/Edison LED  
Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

Future Light  
GlacialLight




**Halco Lighting Technologies**



**Heatron Inc**

i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
JGA Associates/Bulbwizards  
LED Emerald  
LED-LES  
LEDs N Solar  
LED Specialists Inc  
LEDvista Ltd  
LightGuard  
Lighting and Production Resources  
Lighting Orient Co Ltd  
Ligitek Electronics Co Ltd  
LonTin Industry Co Ltd  
Lumi Lime Ltd  
Luums International BV




**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Mango Electronics  
Metropolitan Energy Service-Gulf Coast LEDs  
Neo-Neon LED Lighting International Ltd  
Optoma Technology Inc  
Philips Hadco  
Philips Lumec  
PowerLED




**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
RedBird LED  
Regal Lighting Designs  
RenovaSolar Lda  
Sagitario Lighting SLU



**Shanxi Guangyu LED Lighting Co Ltd**

Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Zhongtian Lighting Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Silvermere Group  
Spark LED Lighting (HK) Co Ltd  
Sunna Energy Pvt Ltd



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Switch Lighting




**Top Energy Saving System Corp (TESS)**

Tri-State LED



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp



**Verbatim Americas LLC**

Visionaire Lighting  
Xing Henglong Lighting Technology Co Ltd



**YUYANG DNU Co Ltd**  
■ See ad on page 4


**OUTDOOR: STREETLIGHTS, GENERAL AREA LIGHTING**

3elamp  
Abacus Lighting Ltd  
Advanced LEDs Ltd  
Advanced Thermal Devices Inc



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Amerlux



**Amphenol LTW Technology Co Ltd**

Andy Optoelectronic Co Ltd  
APACK Inc  
AppLED BV  
Arani  
Armadillo LED  
ATG Electronics Corp  
Auctus Lights Pvt Ltd  
Bare Development Inc  
Beacon Concepts  
Beacon Products



**Beautiful Light Technology Corp**  
■ See ad on page 79

BE Lite Technologies  
Binay Opto Electronics Pvt Ltd

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

section 8 | LED LIGHTING

Bingk LED Technology India  
BMD Lighting Co Ltd  
BMT Group  
Brtech Lighting (Dongguan) Co Ltd  
Carson Technology Co Ltd  
CA Supply Co  
Catalyst LED's  
ChiHua Lighting Technology Co Ltd  
Clean Light Green Light  
CODE Lighting SA

Fawoo Technology Co Ltd  
Fiberdyne Energy/Edison LED  
Fine Technix Co Ltd  
Fobsun Electronics Ltd  
Focus LLC

**KHATOD®**  
LENSES FOR POWER LED

**Khatod Optoelectronic**

**KLUS®**

**KLUS**



**Konica Minolta Sensing Americas Inc**

**ColorStars**

**Color Stars Inc**  
■ See ad on page 83

[www.CommercialEcoLights.com](http://www.CommercialEcoLights.com)

Coyote Marketing LLC  
Dai Shin Technologies Inc  
DBM Reflex Lighting Solutions  
Del International  
Dellux International Inc  
Denggang Lighting Technology Co Ltd  
Dew & Ken Optoelectronics (Zhengzhou) Co Ltd  
Dialight Corp  
DigitaLicht AG  
D-LED Illumination Technologies  
DMX LED Lights  
DongFang Bros Electronic Co Ltd  
Dongguan Jingliang Lighting Factory  
Downey+Rippe  
DuraComm Lighting  
Earth Energy Solutions Group  
Eclipse Lighting Inc

**FRONTAND**  
Technology

**FrontAnD Technology**  
■ See ad on page 91

**Fusion**  
**optix**

**Fusion Optix**  
■ See ad on page 32

Future Energy Solutions  
Future Light

**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62

Fuzhou Morstar Electric Technology Co Ltd  
Gautam Polymers  
Gemma Lighting Ltd  
Geospec Enterprises  
GlacialLight  
GloPlus  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green 4 All Energy Solutions  
Green Lighting LED  
Green Performance Lighting  
Guang Li-Light Power Technology  
HBA Tech Ltd

**HEATRON**

**Heatron Inc**

Helios LED Lightronics Pvt Ltd  
Hephas Co Ltd  
High Power Lighting Corp  
Holland Solutions Ltd  
Illumination Optics Inc  
Innox Pte Ltd  
INNOTRONIKS  
Innovative LED Lighting Inc  
i-Tunnel (Indal Group)  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
JD Greentech-Global Inc

The LED Advocacy Group  
LED Argentina SA  
LED International Lighting Inc  
LEDKE Technology Co Ltd  
LED Light Works  
Led Mode Ltd  
LED Optical Solutions  
LED Power Inc  
LED Roadway Lighting Ltd  
LEDS America Inc  
LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
LED Waves  
Ledway  
LEDworx GmbH  
Leotek Electronics USA Corp  
Lextar Electronics Corp  
Light Emitting Designs LLC  
Light Engines LLC  
Lighthouse WorldWide LLC  
Lighting and Production Resources  
Lighting Orient Co Ltd  
Lighting Science Group Corp  
Light Ocean Technology Corp  
Ligitek Electronics Co Ltd  
LonTin Industry Co Ltd  
Luminarch  
Luums International BV  
LuxInTec SL

**LYNK LABS**

**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Marc LED Ltd  
Marian Inc  
Metropolitan Energy Service-Gulf Coast LEDs  
MIRROR Lighting Inc

**EDISON**

**Edison Opto Corp**  
■ See ad on page 21

EE Green Lighting  
E-Lite OptoTech Co Ltd  
Emergence Technology Consultants LLC  
EnergyMatrix  
enLux Lighting  
EO Lighting  
e3 (Ethos Ethical Energy)  
EuLED Ltd

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Evluma  
Excellence Opto Inc  
Eyeleds International

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>


Neo-Neon LED Lighting International Ltd  
OMS  
Onstate Technologies LED Lighting  
Optogan GmbH  
Optoma Technology Inc  
Opto Tech Corp  
Philips Hadco  
Philips Hanover Lantern  
Philips Lighting UK  
Philips Lumec  
Philips Roadway Lighting

Spark LED Lighting (HK) Co Ltd  
Spring City Electrical Manufacturing  
Stouch Lighting  
Sunenergy1  
Sunna Energy Pvt Ltd


**PORTABLE LIGHTING  
(FLASHLIGHTS, LANTERNS ETC)**  
Allied Electronics



**PROLED**<sup>®</sup>  
PROLED - MBN GmbH  
■ See ad on page 72



**SUNON**<sup>®</sup>  
Sunonwealth Electric Machine Industry Co Ltd  
■ See ad on page 1




**American Bright Optoelectronics Corp**  
■ See ad on page 17

Protect-R-Shield

Sunsify International  
Taiwan Oasis Technology Co Ltd

Canada LEDs  
DigiLighting Inc  
Dongguan Jingliang Lighting Factory  
Downey+Rippe



**proto labs**<sup>®</sup>  
Real Parts. Really Fast.<sup>™</sup>  
Proto Labs Inc  
■ See ad on page 37



**TESS**  
Top Energy Saving System Corp.  
Top Energy Saving System Corp (TESS)



**Edison Opto Corp**  
■ See ad on page 21

Putian International Co  
Quasar Light Co Ltd  
Rachamalla Lighting Solutions Pvt Ltd  
RenovaSolar Lda  
Runion Energy Solutions LLC  
S3J Electronics LLC  
SATHEA  
Seesmart Inc  
Selectronic  
Shanghai Neolux LED Lightings Co Ltd  
Shanghai Yaming-Lighting Co Ltd


Tri-State LED



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98



**Everlight Electronics Co Ltd**  
■ See ad on page 11



**Shanxi Guangyu LED Lighting Co Ltd**

UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd  
UPEC Electronics Corp  
Urban Solar Corp  
US Eco-Light  
VAOPTO  
Visionaire Lighting  
Watt Works Inc  
Wuxi Kinlight Optoelec Technology  
Xiamen Xing Henglong Lighting Technology Co Ltd  
Xing Henglong Lighting Technology Co Ltd

Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111  
Shenzhen Fujisunwah Electronic Technology Co Ltd  
Shenzhen Greeup Optoelectronic Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Spark Optoelectronics  
**Signcomplex Ltd**  
■ See ad on page 75  
Silvermere Group  
Smartgreen Technology Co Ltd  
Smart Technologies Electronics Ltd  
SolarOne Sololutions Inc



**YUYANG DNU Co Ltd**  
■ See ad on page 4

Gautam Polymers  
GlacialLight



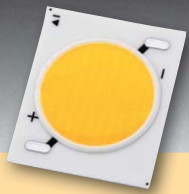
**Heatron Inc**

ZEISS GmbH  
Zetamar Elektronik Tic Ltd Sti  
Zhejiang Jinzhong Machinery & Electronic Technology Co Ltd  
Zhuhai Mingyuan Lighting Co Ltd  
ZMDI - Zentrum Mikroelektronik Dresden

High Power Lighting Corp  
Illumination Optics Inc  
IVUS Energy Innovations  
Jason Fidelity Consulting Ltd  
The LED Advocacy Group  
LEDs N Solar  
LEDtronics Inc  
Lighting and Production Resources  
Liteon France  
LuxInTec SL



# HIGH COLOUR RENDERING INDEX



[IC]

[OPTO]

[LED]

[LCD]

[RF]

Sharp has extended its LED portfolio to include three high-luminosity modules: the 15W, 25W and 50W MegaZENI LEDs. These LED arrays are compact, light and extremely bright with a shiningly high light quality. Sharp's MegaZENI LEDs give product developers and designers the chance to achieve the best possible colour reproduction in surroundings where ultra-high luminance is essential, e.g. spotlights or downlights. These new arrays stand out from the crowd with a luminous flux of up to 4,770 lm, a luminous efficacy of up to 105 lm/W, a CRI of up to 93 and a lifetime of up to 40,000 hours at an operating

temperature of up to 90° C. Such qualities mean they are not just the intelligent alternative to individual LEDs but also first choice for indoor and outdoor lighting applications. MegaZENI LEDs are Energy Star and ANSI-compliant, combine maximum energy efficiency with minimum thermal dissipation, and come in various colour temperatures from warm to cool white.

**Our Service Team will be glad to supply you with any engineering samples and advice you need. E-Mail: [info.sme@sharp.eu](mailto:info.sme@sharp.eu); Phone: +49 (0)180 507 35 07; [www.sharpleds.eu](http://www.sharpleds.eu)**

**light+building**

Visit us at the Light+Building 2012  
from 15–20 April in Frankfurt am Main: Hall 4.2, Booth J71.

**SHARP**

Microelectronics

section 8 | **LED LIGHTING**


**SPONSOR | TOSHIBA**  
Leading Innovation >>>

Neo-Neon LED Lighting International Ltd  
RenovaSolar Lda  
Selectronic



**Shanxi Guangyu LED Lighting Co Ltd**

Shenzhen Jiuzhou Optoelectronics  
Smart Technologies Electronics Ltd  
Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd




**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Tasca  
TerraLUX Inc  
WiseLED  
ZMDI - Zentrum Mikroelektronik Dresden

**REFRIGERATED CABINET LIGHTING**

Aladdin Lighting Technologies Inc  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
ATG Electronics Corp  
Atlanta Light Bulbs  
Binay Opto Electronics Pvt Ltd  
BJB GmbH & Co KG  
BL2BL  
DigiLighting Inc  
Dominio LED  
Earth Energy Solutions Group  
Eco Marketing  
Energyled Corp  
EO Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11



**FrontAnD Technology**  
■ See ad on page 91



**Fusion Optix**  
■ See ad on page 32



**Future Lighting Solutions**  
■ See ad on page 62



**Heatron Inc**

HET LED HUIS  
Holland Solutions Ltd  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
Kara Jalmarit International Ltd  
LED Lighting Inc  
LED Power Inc  
LED Retro8  
LEDs N Solar  
Light Emitting Designs LLC  
Liteon France  
Lumicrest Lighting Solutions Inc  
Lumoluce  
Luums International BV



**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd  
Oree Advanced Illumination Ltd  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Seesmart Inc  
Selectronic  
Shenzhen Bright Lighting Technology  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
Tri-State LED




**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

**RETAIL DISPLAY LIGHTING**



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Aladdin Lighting Technologies Inc  
ALLEDS Lighting Corp



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Amerlux  
AppLED BV  
ATG Electronics Corp



**Beautiful Light Technology Corp**  
■ See ad on page 79

Bingk LED Technology India



**Brillianz Electronic Systems Ltd**

Canada LEDs  
Carson Technology Co Ltd  
C Crane Co Inc



**Color Stars Inc**  
■ See ad on page 83

Cooliance Inc  
CraLux Lighting  
Del International  
DigiLighting Inc

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | **LED LIGHTING**

Eco Marketing  
EcoTek Lighting



**Edison Opto Corp**  
■ See ad on page 21

Edlux Luminaire  
E-Lite OptoTech Co Ltd  
Elumina Technology Inc  
Energyled Corp  
EnvironmentalLights.com  
EO Lighting  
Eternaleds Inc  
Etrilum



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fiberdyne Energy/Edison LED  
Firefly LED Lighting Inc



**Fusion Optix**  
■ See ad on page 32



**Future Lightings Solutions**  
■ See ad on page 62

Green Supply



**Halco Lighting Technologies**



**Heatron Inc**

Holland Solutions Ltd  
Illumination Optics Inc  
Illumination Unlimited USA Inc



INNOVATIONS IN OPTICS

**Innovations in Optics Inc**

ITC Inc  
i-vision Lighting Solutions Ltd  
Jason Fidelity Consulting Ltd  
JD Greentech-Global Inc  
LED Concepts  
LED-LES  
LED Lighting Inc  
LED Lights Canada  
LEDnovation Inc  
LED Power Inc  
LEDs N Solar  
LED Source  
LEDtronics Inc  
LED Waves  
Lighting and Production Resources  
Liteon France  
Lumoluce



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc



**Matrix Lighting Ltd**  
■ See ad on inside front cover

Motif Architectural Lighting  
Neo-Neon LED Lighting International Ltd



**Nexus Lighting Inc**

Optical Illumination Corp  
OPTILED Lighting  
Oree Advanced Illumination Ltd  
Outwater Plastics Industries Inc  
Permlight for Signs  
Phoster Industries  
PowerLED Lighting Corp



**PROLED - MBN GmbH**  
■ See ad on page 72

Rayconn Electronics Co Ltd  
Rosco Laboratories Inc  
Sagitario Lighting SLU  
SchahLED Lighting  
Selectronic  
Shanghai Yaming-Lighting Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Silvermere Group  
Spark LED Lighting (HK) Co Ltd  
SSLI Ltd  
Sunsify International  
Tecartex Digital Solutions SL



Top Energy Saving System Corp.

**Top Energy Saving System Corp (TESS)**

Tri-State LED



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UPEC Electronics Corp



**Verbatim Americas LLC**

Vexica Technology Ltd  
Wessel LED Lighting Systems



**YUYANG DNU Co Ltd**  
■ See ad on page 4

YYZ Systems Inc

**SOLAR-POWERED & OFF-GRID LIGHTING**


Advanced LEDs Ltd  
Advanced Thermal Devices Inc

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>



**Aeon Lighting Technology Inc**  
■ See ad on page 27



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Arani  
Bare Development Inc  
BC Renewable Energy  
BG-LED.com  
BH Design Plus  
Carmanah Technologies Corp




**Color Stars Inc**  
■ See ad on page 83

CyberBiota Inc  
DST  
E-Lite OptoTech Co Ltd  
EnergyMatrix  
EnvironmentalLights.com  
Fiberdyne Energy/Edison LED  
Focus LLC



**FrontAnD Technology**  
■ See ad on page 91

Fuzhou Morstar Electric Technology Co Ltd  
Gautam Polymers



**Heatron Inc**

Illumination Optics Inc  
i-vision Lighting Solutions Ltd  
JD Greentech-Global Inc  
The LED Advocacy Group  
LED Argentina SA  
LED Grow Master Global LLC  
LEDs N Solar  
LEDtronics Inc

Lighthouse WorldWide LLC  
Ligitek Electronics Co Ltd  
Liteon France  
Luums International BV



**Lynk Labs Inc**  
■ See ad on page 6

Neo-Neon LED Lighting International Ltd  
Philips Lumec  
Rachamalla Lighting Solutions Pvt Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
S2 Innovative Products Group Ltd  
Selectronic  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Spark Optoelectronics  
SolarOne Solutions Inc  
Sunsify International  
Switch Lighting  
Synapse Wireless Inc  
Trilux LED Lighting Industry Corp  
UNI-EE Electric Appliance Co Ltd  
Urban Solar Corp  
US Eco-Light  
Visionaire Lighting




**YUYANG DNU Co Ltd**  
■ See ad on page 4

Zetamar Elektronik Tic Ltd Sti

**ARCHITECTURAL ENTERTAINMENT & DECORATIVE LIGHTING**

**BORDER/CONTOUR LIGHTING**

AC Entertainment Technologies Ltd  
Alhacen Light  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
Architectural FX Ltd  
ATG Electronics Corp  
Beta Opto Technology Co Ltd  
Bingk LED Technology India  
Boca Flasher  
Bright View Technologies

Del International  
Dellux International Inc  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
Dynamic LED Ltd  
EcoTek Lighting  
Eden Park Illumination  
E-Lite OptoTech Co Ltd  
EnvironmentalLights.com  
ETEC Lighting Co Ltd  
Eyeleds International  
Farralane Pro Lighting Audio & Video Systems  
Fobsun Electronics Ltd




**Fusion Optix**  
■ See ad on page 32

High Power Lighting Corp  
Illumination Optics Inc  
Illumination Physics  
Impact Lighting Inc  
Ing Elmar Schrutek  
Innolux Pte Ltd  
JD Greentech-Global Inc  
JGA Associates/Bulbwizards  
Juice Technology Ltd  
Kara Jalmarit International Ltd  
LEDcentre.uk.com  
LEDKE Technology Co Ltd  
LED Lighting Inc



**LED Linear**  
linear lighting solutions  
**LED Linear GmbH**  
■ See ad on page 69

LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
Light Emission Technology Ltd  
Lighting and Production Resources  
LightWild  
Logolight  
Luums International BV  
LuxInTec SL



**Lynk Labs Inc**  
■ See ad on page 6

Maxx LED Inc  
Mica Lighting Co Inc

**FRONTAND**  
Technology

Best Maker for LED Lighting

**AR111**

Knock out  
75W Halogen



**Down Light**  
Nichia Edge-lit



2012 Show Calendar

Apr. 15~20 Light + Building (Frankfurt)  
Oct. 27~30 HK Lighting Fair (HongKong)

**W E L C O M E** to visit us !

[www.frontand.com.tw](http://www.frontand.com.tw)  
[info@frontand.com.tw](mailto:info@frontand.com.tw)  
No.9, Neixi Rd., Luzhu Township,  
Taoyuan County 33852, Taiwan



Light by : **CREE** LEDs

LIGHT BY **LUXEON**

**NICHIA**  
LED inside

**SEMILEDs**

**FRONTAND**  
Technology

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

NEON-EK Ltd  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
OPTILED Lighting



**Optocore Ltd**

Opto Tech Corp  
Orient Lighting Co Ltd  
Outwater Plastics Industries Inc



**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
S2 Innovative Products Group Ltd  
Sagitario Lighting SLU  
Selectronic  
Shanghai Yaming-Lighting Co Ltd  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111  
Shenzhen Jiuzhou Optoelectronics  
**Signcomplex Ltd**  
■ See ad on page 75  
SolidApollo  
Spark LED Lighting (HK) Co Ltd  
Super Service System  
Tokistar Lighting Inc



**USHIO America**

usLEDsupply  
VAOPTO



**Verbatim Americas LLC**

Wamco Inc  
Wessel LED Lighting Systems  
X Design Led Lighting


**DECORATIVE & HOLIDAY LIGHTING**

Acoya Illumination



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Alhacen Light  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
ATG Electronics Corp  
Beadlight  
Bingk LED Technology India  
Bright View Technologies  
ChiHua Lighting Technology Co Ltd  
CYRON Lighting  
DG Lighting Technology Co Ltd  
DigiLighting Inc  
Digitalicht AG  
DMX LED Lights  
Dongguan Jingliang Lighting Factory  
Dynamic LED Ltd  
EcoTek Lighting  
Eden Park Illumination  
E-Lite OptoTech Co Ltd  
Eneltec Group  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
ETEC Lighting Co Ltd



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Eyeleds Canada  
Fobsun Electronics Ltd  
High Power Lighting Corp  
Illumination Physics  
Innovative Custom Lighting Inc  
JD Greentech-Global Inc  
Lanzarote LED  
LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
Light Emission Technology Ltd  
Lighting and Production Resources  
Light Solution  
Logolight  
Lutron Electronics  
Luums International BV

LuxInTec SL  
Macroblock Inc  
Mica Lighting Co Inc  
Motif Architectural Lighting  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
ONLY Technology LTD  
OPTILED Lighting  
Opulent Technologies Inc



**PROLED - MBN GmbH**  
■ See ad on page 72

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Rosco Laboratories Inc  
Sagitario Lighting SLU  
Selectronic  
Shenzhen Bright Lighting Technology  
Shenzhen Hongxing Lighting Co Ltd  
Shenzhen Lamp Technology Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
Super Service System  
Tokistar Lighting Inc  
TOP LED Ltd  
Unilumin Group Co Ltd  
UPEC Electronics Corp  
VAOPTO


**FLOODLIGHTS, WALL-WASHERS, BATTENS**

3elamp  
Abacus Lighting Ltd  
AC Entertainment Technologies Ltd  
Acoya Illumination  
Advanced LEDs Ltd



**Aeon Lighting Technology Inc**  
■ See ad on page 27

Alder Optomechanical Corp  
Alhacen Light  
Alliance Optotek Corp  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | **LED LIGHTING**

## Amphenol LTW

**Amphenol LTW Technology Co Ltd**

Andy Optoelectronic Co Ltd  
APACK Inc  
AppLED BV  
Armadillo LED  
ATG Electronics Corp  
Bare Development Inc  
Beacon Products  
BG-LED.com  
BH Design Plus  
Bingk LED Technology India  
Bright View Technologies  
CAO Group Inc

## ColorStars

**Color Stars Inc**  
■ See ad on page 83

CoolLED Ltd  
Del International  
Denggang Lighting Technology Co Ltd  
Designplan Lighting Inc  
DG Lighting Technology Co Ltd  
Diamond LED Lighting  
DigiLighting Inc  
DigitaLicht AG  
D-LED Illumination Technologies  
Dynamic LED Ltd  
Eclipse Lighting Inc

## ecomaa LIGHTING

**Ecomaa Lighting Inc**

Eden Park Illumination  
EE Green Lighting  
TheElectricWeb.com  
E-Lite OptoTech Co Ltd  
EnvironmentalLights.com  
EO Lighting  
Etrilum  
Everbright Lights Inc

## EVERLIGHT

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Eyeleds International  
Fine Technix Co Ltd  
Firefly LED Lighting Inc  
Fobsun Electronics Ltd

## FRONTAND Technology

**FrontAnD Technology**  
■ See ad on page 91

## Fusion Optix

**Fusion Optix**  
■ See ad on page 32

Geospec Enterprises  
GP Lighting Technology  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Lighting LED  
HBA Tech Ltd  
Helios LED Lightronics Pvt Ltd  
High Power Lighting Corp  
Hokuriku Malaysia Sdn Bnd  
Illumination Optics Inc  
Illumination Physics  
Impact Lighting Inc

## INNOVATIONS IN OPTICS

**Innovations in Optics Inc**

i-Tunnel (Indal Group)  
JD Greentech-Global Inc

## KHATOD® LENSES FOR POWER LED

**Khatod Optoelectronic**

## LED Linear linear lighting solutions

**LED Linear GmbH**  
■ See ad on page 69

Led Mode Ltd  
LedScene sa  
LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
Light Emission Technology Ltd

Lighting and Production Resources  
Lighting Orient Co Ltd  
Light Ocean Technology Corp  
Ligitek Electronics Co Ltd  
Lingshan Trading Co Ltd  
Lumenarex Inc  
Lumenpulse  
Lumi Lime Ltd  
Luums International BV  
LuxInTec SL

## LYNK LABS

**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Nanker LED Lighting Ltd  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
Notis Design  
OPTILED Lighting  
Opto Tech Corp

## SYLVANIA

**OSRAM SYLVANIA**  
■ See ad on page 97

Philips Hadco  
Philips Lighting UK  
Prime Light Pte Ltd

## PROLED®

**PROLED - MBN GmbH**  
■ See ad on page 72

Protect-R-Shield  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Seesmart Inc  
Selectronic  
Senso Lighting Inc  
Shanghai Yaming-Lighting Co Ltd  
Shenzhen Bright Lighting Technology  
Shenzhen Greup Optoelectronic Co Ltd  
Shenzhen Hongxing Lighting Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Lamp Technology Co Ltd  
Shree Ram Electronics  
**Signcomplex Ltd**  
■ See ad on page 75  
Silvermere Group

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

Smartgreen Technology Co Ltd  
Smart Technologies Electronics Ltd  
SolarOne Sololutions Inc  
SolidApollo  
Solid State Luminaires  
Spark LED Lighting (HK) Co Ltd  
Sunna Energy Pvt Ltd  
Super Service System  
Traxon Technologies Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd  
UPEC Electronics Corp  
VAOPTO



**Verbatim Americas LLC**

X Design Led Lighting



**YUYANG DNU Co Ltd**  
■ See ad on page 4

ZEISST GmbH

**IN-GROUND LUMINAIRES**



**Aeon Lighting Technology Inc**  
■ See ad on page 27

APACK Inc  
AppLED BV  
ATG Electronics Corp  
Atmos Lighting Ltd  
Beacon Products  
BH Design Plus  
Bingk LED Technology India  
Continental Inc  
Del International  
Denggang Lighting Technology Co Ltd  
DG Lighting Technology Co Ltd  
DigitaLicht AG  
DMS Lighting LLC  
Dynamic LED Ltd

Eden Park Illumination  
E-Lite OptoTech Co Ltd  
Eneltec Group  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Eyeleds Canada  
Eyeleds International  
Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

GlacialLight  
Illumination Physics  
JD Greentech-Global Inc



**Khatod Optoelectronic**

LEDaquariums  
LEDs N Solar  
LEDvista Ltd  
Light Emission Technology Ltd  
Lighting and Production Resources  
Light Solution  
Luums International BV  
LuxInTec SL  
Macroblock Inc  
Neo-Neon LED Lighting International Ltd  
OPTILED Lighting  
Philips Hadco



**PROLED - MBN GmbH**  
■ See ad on page 72

Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Senslite Corp  
Shanghai Yaming-Lighting Co Ltd  
Shree Ram Electronics  
**Signcomplex Ltd**  
■ See ad on page 75

SolidApollo  
Spark LED Lighting (HK) Co Ltd  
Sunna Energy Pvt Ltd  
Tecartex Digital Solutions SL  
VAOPTO  
Wessel LED Lighting Systems  
X Design Led Lighting

**MARKER LIGHTS, UPLIGHTS**

AC Entertainment Technologies Ltd  
Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

AppLED BV  
ATG Electronics Corp  
BH Design Plus  
Binay Opto Electronics Pvt Ltd  
Bingk LED Technology India  
Del International  
DigitaLicht AG  
Dongguan Jingliang Lighting Factory  
Eden Park Illumination  
[EnvironmentalLights.com](http://EnvironmentalLights.com)  
EO Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Eyeleds Canada  
Eyeleds International  
GlacialLight  
High Power Lighting Corp  
Illumination Optics Inc  
Illumination Physics  
Kara Jalmarit International Ltd



**LEDdynamics Inc**

LEDs N Solar  
LEDtronics Inc  
LEDvista Ltd  
Light Emission Technology Ltd  
Lighting and Production Resources  
Light Ocean Technology Corp  
LuxInTec SL  
Macroblock Inc  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd



**SPONSOR | TOSHIBA**  
Leading Innovation >>>

section 8 | **LED LIGHTING**

Rayconn Electronics Co Ltd  
RenovaSolar Lda  
S2 Innovative Products Group Ltd  
Sagitario Lighting SLU  
Selectronic  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen MR Photoelectricity Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
SolidApollo  
UNI-EE Electric Appliance Co Ltd  
VAOPTO  
Wessel LED Lighting Systems  
X Design Led Lighting

**MOVING HEAD PROJECTORS**

Impact Lighting Inc




**Ledlink Optics Inc**  
■ See ad on page 5

LEDs N Solar  
Lighting and Production Resources  
LuxInTec SL  
Macroblock Inc  
MTEC GmbH  
Neo-Neon LED Lighting International Ltd  
RenovaSolar Lda  
UNI-EE Electric Appliance Co Ltd  
VAOPTO

**PANELS/TILES WITH LED BACKLIGHTING**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
Beadlight  
BH Design Plus  
Bingk LED Technology India  
Bitro Group Inc  
Brightcast Co Ltd  
Carmanah Signs  
Denggang Lighting Technology Co Ltd  
DG Lighting Technology Co Ltd  
DigiLighting Inc  
DigitaLicht AG  
Dongguan Jingliang Lighting Factory  
Edgelit Acrylics LLC  
Energyled Corp  
EnvironmentalLights.com  
EO Lighting



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Farralane Pro Lighting Audio & Video Systems  
Fine Technix Co Ltd  
Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32

GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
High Power Lighting Corp  
Illinois LED Products Inc  
Illumination Optics Inc  
JD Greentech-Global Inc  
LEDaquariums  
LED Concepts  
LedScene sa  
LEDs N Solar  
LED Source  
LEDtronics Inc  
LEDvista Ltd  
Lighting and Production Resources  
Light Ocean Technology Corp  
LightWild  
Logolight  
LumiCe Co Ltd  
LuxInTec SL




**Lynk Labs Inc**  
■ See ad on page 6

Medical Lighting Systems  
Mimaki ECO Lighting Solutions  
Nanker LED Lighting Ltd  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
ONLY Technology LTD  
Oree Advanced Illumination Ltd



**OSRAM SYLVANIA**  
■ See ad on page 97

Prime Light Pte Ltd  
Quasar Light Co Ltd  
Rosco Laboratories Inc  
Sagitario Lighting SLU  
SAKMA Electronica Industrial SA  
Selectronic  
Shenzhen Greeup Optoelectronic Co Ltd  
Shenzhen Lamp Technology Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
SolidApollo  
Spark LED Lighting (HK) Co Ltd  
Stellaray Technology Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

VAOPTO  
Wessel LED Lighting Systems  
World of Lights LED Solutions Inc



**YUYANG DNU Co Ltd**  
■ See ad on page 4

YYZ Systems Inc

**TV, FILM & STAGE LIGHTING**

AC Entertainment Technologies Ltd  
Allied Electronics  
AppLED BV  
ATG Electronics Corp  
Brightcast Co Ltd  
Cepoint Networks LLC  
DigitaLicht AG  
D-LED Illumination Technologies



**Ecomaa Lighting Inc**

eldoLED America Inc



**eldoLED BV**

Elkays Electronics

section 8 | **LED LIGHTING**

**TOSHIBA**  
SPONSOR | Leading Innovation >>>

**EVERLIGHT**

Everlight Electronics Co Ltd  
■ See ad on page 11

**Verbatim**

Verbatim Americas LLC

**KLUS**

KLUS

**Fusion Optix**

Fusion Optix  
■ See ad on page 32

**UNDERWATER LUMINAIRES**

**ALT**

Aeon Lighting Technology Inc  
■ See ad on page 27

**LED Linear**  
linear lighting solutions

LED Linear GmbH  
■ See ad on page 69

**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
JD Greentech-Global Inc

All Brite International Co Ltd

**Amphenol LTW**

Amphenol LTW Technology Co Ltd

LEDaquariums

LEDs N Solar  
Lighting and Production Resources  
Lighting Orient Co Ltd  
Lumenpulse  
LuxInTec SL  
Macroblock Inc  
Mango Electronics  
National LED Direct  
Neo-Neon LED Lighting International Ltd  
Prime Light Pte Ltd

**KONICA MINOLTA**  
SENSING AMERICAS, INC.

Konica Minolta Sensing Americas Inc

LEDs N Solar  
LED Source  
Lighting and Production Resources  
LuxInTec SL

**LYNK LABS**

Lynk Labs Inc  
■ See ad on page 6

**ColorStars**

Color Stars Inc  
■ See ad on page 83

**PROLED**

PROLED - MBN GmbH  
■ See ad on page 72

Macroblock Inc  
Mica Lighting Co Inc  
MTEC GmbH  
Neo-Neon LED Lighting International Ltd  
opsira GmbH  
Opto Tech Corp

Del International  
Denggang Lighting Technology Co Ltd  
DG Lighting Technology Co Ltd  
DigitalLicht AG  
E-Lite OptoTech Co Ltd  
Eneltec Group  
EO Lighting  
Eyeleds International  
Fobsun Electronics Ltd  
GP Lighting Technology  
Green 4 All Energy Solutions  
Helios LED Lightronics Pvt Ltd  
Impact Lighting Inc  
Ing Elmar Schrutek  
JD Greentech-Global Inc

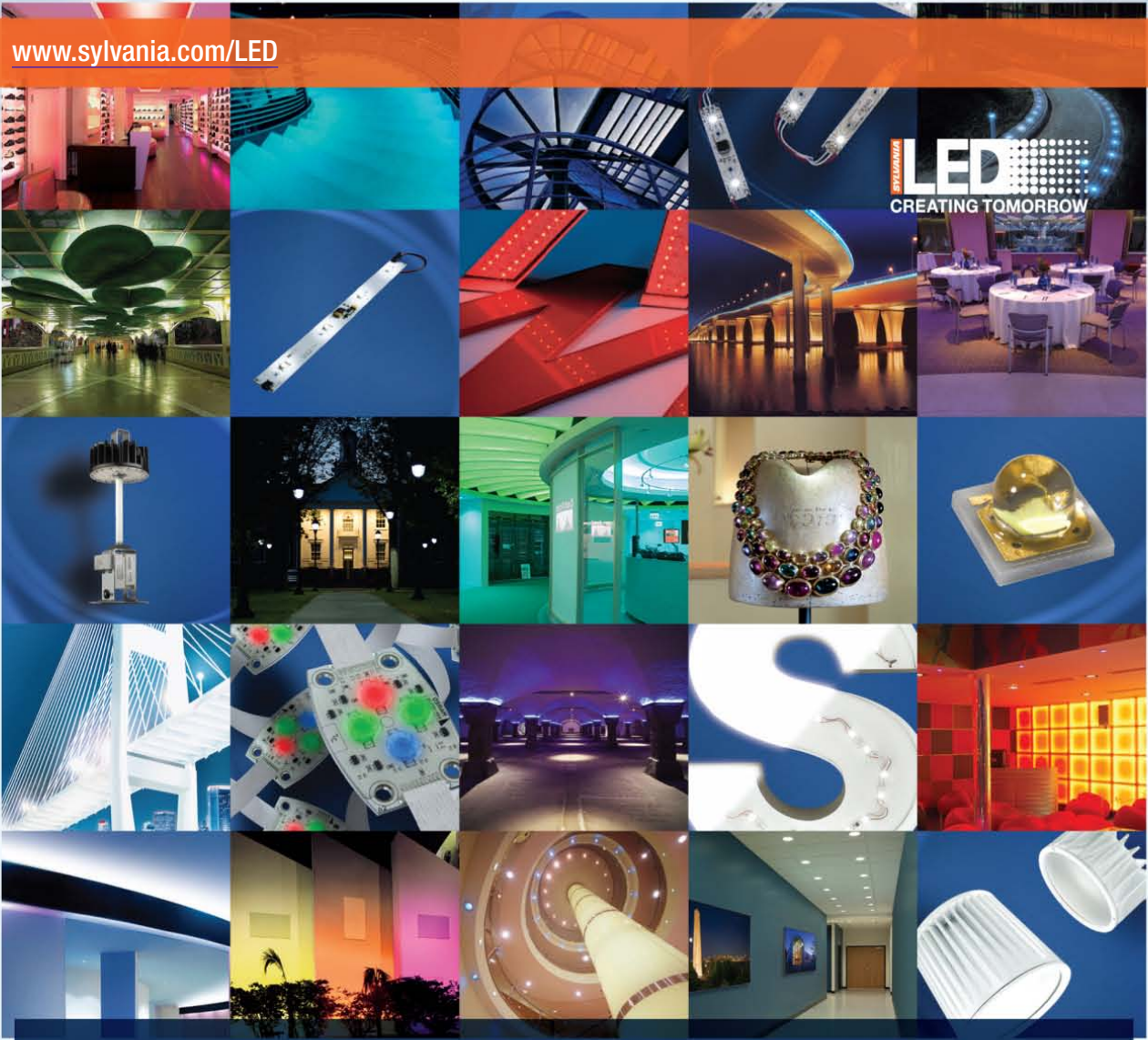
Rayconn Electronics Co Ltd  
RenovaSolar Lda  
Sagitario Lighting SLU  
Shanghai Yaming-Lighting Co Ltd  
Shree Ram Electronics  
**Signcomplex Ltd**  
■ See ad on page 75  
Spark LED Lighting (HK) Co Ltd  
VAOPTO  
X Design Led Lighting

**SYLVANIA**

**OSRAM SYLVANIA**  
■ See ad on page 97

Rosco Laboratories Inc  
**Signcomplex Ltd**  
■ See ad on page 75  
VAOPTO

[www.sylvania.com/LED](http://www.sylvania.com/LED)



Certain photography © *Gold Bridge Photo* © Tito Wong

## Our solid state lighting performs on a global scale.

SYLVANIA is a leader in LED lighting solutions in North America, and together with OSRAM, we delivered over a billion dollars in solid state lighting sales worldwide last year. Constantly investing in innovative technologies and products that span the complete range of solid state lighting, SYLVANIA shines bright in the new world of lighting. And with SYLVANIA Lighting Services, we're the only lighting manufacturer with its own full-service installation and maintenance business. To learn more about our cutting-edge LED solutions, call 1-800-LIGHTBULB or visit us online at [www.sylvania.com/LED](http://www.sylvania.com/LED).



To get the full LED story on your phone, snap a picture of this tag. (Requires a free mobile app from <http://gettag.mobi>)





# RELY ON UL

As lighting technology evolves, so does UL. In addition to product safety certification, we also provide industry-leading performance testing, environmental programs and robust training initiatives.

UL is widely known for our dedication to quality, technical expertise and being a symbol of trust. From code authorities to specifiers and consumers to retailers, our 100-year history of advancing safety demonstrates our commitment to protecting people, products and places.

When you rely on UL for your lighting product needs, your future is bright.

VISIT [WWW.UL.COM/BRIGHT](http://WWW.UL.COM/BRIGHT)



# SECTION 9


# LEDs MAGAZINE

## LED DISPLAYS AND SIGNS

### DISPLAYS & SIGNS

#### ALPHANUMERIC DISPLAYS, TICKERS, SCOREBOARDS

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
CAO Group Inc  
Carmanah Signs  
ChromeLED Corp  
Coolux Electro-optics Co Ltd  
DMX LED Lights  
**EBV Elektronik**  
■ See ad on page 101  
Ekta  
Electrobrain Enterprises



**Everlight Electronics Co Ltd**  
■ See ad on page 11

JiaYao Industries Co Ltd  
Kingbright Corp  
Kingbright Electronic Europe GmbH  
Konka LED  
LED Signs Pty Ltd  
LEDvista Ltd  
Messagemaker Displays Ltd  
MSC Vertriebs GmbH  
Neo-Neon LED Lighting International Ltd  
Opto Tech Corp  
OSA Opto Light GmbH



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

Prime Light Pte Ltd

Retop LED Display Co Ltd  
ROHM Semiconductor USA LLC  
Salient Pty Ltd  
Selectronic  
Shenzhen Absen Industry Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Lamp Technology Co Ltd  
Shenzhen LCF Tec Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Taiwan Oasis Technology Co Ltd  
Tally Display Corp  
UNI-EE Electric Appliance Co Ltd  
VAOPTO  
viviLED Display Co  
Vvview Optoelectronic Technology Co Ltd


#### BILLBOARDS

Alliance Optotek Corp  
Allied Electronics  
APACK Inc  
Apron Teknoloji  
ATG Electronics Corp  
BG-LED.com  
Carmanah Signs  
CD2 BV  
Coolux Electro-optics Co Ltd  
CS Bright Corp  
DMX LED Lights  
EcoTek Lighting  
Ekta  
Electrobrain Enterprises  
EO Lighting  
GP Lighting Technology  
JiaYao Industries Co Ltd  
Konka LED  
LED Screens Pty Ltd  
LED Signs Pty Ltd  
LEDvista Ltd  
Linear Technology  
Messagemaker Displays Ltd  
Milliken Distribution  
Neo-Neon LED Lighting International Ltd  
NES Light



**Optocore Ltd**

Opto Tech Corp  
Retop LED Display Co Ltd  
Sagitario Lighting SLU  
Shenzhen Absen Industry Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen LCF Tec Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Top Technology Co Ltd  
Shenzhen Topvision Optoelectronic Technology Co Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98


VAOPTO  
viviLED Display Co  
Vvview Optoelectronic Technology Co Ltd  
Wall Industries Inc



**YUYANG DNU Co Ltd**  
■ See ad on page 4

#### EXIT & EMERGENCY SIGNS

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Andy Optoelectronic Co Ltd  
ATG Electronics Corp  
Beacon Concepts  
Chloride Systems  
ChromeLED Corp  
Coolux Electro-optics Co Ltd  
Denggang Lighting Technology Co Ltd  
DG Lighting Technology Co Ltd  
EnvironmentalLights.com  
EO Lighting

section 9 | LED DISPLAYS AND SIGNS

GP Lighting Technology  
LEDtronics Inc  
LEDvista Ltd  
LightGuard  
Ligitek Electronics Co Ltd  
MIRROR Lighting Inc  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
Opulent Technologies Inc  
Selectronic  
Spark LED Lighting (HK) Co Ltd



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
VAOPTO  
Visual Dimensions NA Inc

**HIGH RESOLUTION INDOOR VIDEO SCREENS**

Allied Electronics  
Alpha View  
Apron Teknoloji  
ATG Electronics Corp  
CD2 BV  
Coolux Electro-optics Co Ltd  
Creative Technology US  
CT Creative Technology  
Dongguan Jingliang Lighting Factory  
Edge Electronics Inc  
Ekta  
Electrobrain Enterprises  
EO Lighting



**FrontAnD Technology**  
■ See ad on page 91

Fulsun Led Display  
Industrial Computing  
JiaYao Industries Co Ltd



**Konica Minolta Sensing Americas Inc**

Konka LED  
[KustomXpress.com](http://KustomXpress.com)  
Macroblock Inc  
Messagemaker Displays Ltd  
Milliken Distribution  
MultiMedia Farms  
Neo-Neon LED Lighting International Ltd  
Opto Tech Corp

Power Audiovisual Rental Co  
Retop LED Display Co Ltd



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Absen Industry Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Top Technology Co Ltd  
Shenzhen Topvision Optoelectronic Technology Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Tally Display Corp  
Traxon Technologies Ltd  
Unilumin Group Co Ltd  
VAOPTO  
viviLED Display Co  
Vvview Optoelectronic Technology Co Ltd

**LARGE OUTDOOR VIDEO DISPLAYS**

Allied Electronics  
Alpha View



**Amphenol LTW Technology Co Ltd**

Apron Teknoloji  
ATG Electronics Corp  
Brite-LED Optoelectronics Inc  
CD2 BV  
Creative Technology US  
CT Creative Technology  
DigitalLicht AG  
Digital Projection Inc  
DongFang Bros Electronic Co Ltd  
EcoTek Lighting  
Edge Electronics Inc  
Ekta  
EO Lighting  
Fulsun Led Display  
GlacialLight  
JiaYao Industries Co Ltd



**Konica Minolta Sensing Americas Inc**

Konka LED  
LED Screens Pty Ltd  
LED Signs Pty Ltd  
Linear Technology  
Macroblock Inc  
Maxx LED Inc  
Messagemaker Displays Ltd  
Milliken Distribution

MTEC GmbH  
MultiMedia Farms  
Neo-Neon LED Lighting International Ltd  
Neoti  
Opto Tech Corp  
Power Audiovisual Rental Co  
Prime Light Pte Ltd  
Protect-R-Shield  
Retop LED Display Co Ltd  
RGB Lights  
Salient Pty Ltd  
Selectronic



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Absen Industry Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Lamp Technology Co Ltd  
Shenzhen LCF Tec Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Top Technology Co Ltd  
Shenzhen Topvision Optoelectronic Technology Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Tally Display Corp



**UL - Underwriters Laboratories Inc**  
■ See ad on page 98

UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd  
VAOPTO  
viviLED Display Co  
Vvview Optoelectronic Technology Co Ltd

**MOBILE LED SCREEN TRAILERS, FRAMEWORKS**

Alpha View  
ATG Electronics Corp  
Binay Opto Electronics Pvt Ltd  
CD2 BV  
EcoTek Lighting  
Ekta  
Industrial Computing  
[KustomXpress.com](http://KustomXpress.com)  
LEDvista Ltd  
Messagemaker Displays Ltd  
MultiMedia Farms  
Neo-Neon LED Lighting International Ltd  
Neoti  
Sagitaro Lighting SLU  
Shenzhen Absen Industry Co Ltd  
Shenzhen LCF Tec Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
UNI-EE Electric Appliance Co Ltd  
VAOPTO



## LED it be White...

### Avago's Next Generation Brighter Performance 0.5W PLCC-4 White LEDs Now Available – For All Your Lighting Needs

The world's brightest 0.5W PLCC-4 SMT LED has been designed to optimize your products for backlighting, automotive lighting, decorative lighting, cabin lighting, shop lighting and other lighting applications. This mid-power LED series has a wide viewing angle of 120°. It comes in an industry-standard PLCC-4 package (3.2 x 2.8 x 1.9 mm) – enhanced for better heat dissipation to sustain high drive currents and to produce higher light output with better flux performance.

EBV and Avago support **narrow colour and flux bin selections from inventory** with various options in Warm, Neutral and Cool White.

#### KEY FEATURES

- Minimum 43 Lumen at 150 mA in Cool White
- Low thermal resistance 40°C/W
- Operating temperature –40 to +120 °C
- AEC-Q101 Automotive qualified
- Full range of colors, including cool, neutral and warm white

**REGISTER NOW** to find more information and to win an MR16 LED spotlight and get FREE LED samples:  
[www.ebv.com/avagoled](http://www.ebv.com/avagoled)

Distribution is today.  
Tomorrow is EBV!  
[www.ebv.com](http://www.ebv.com)

**AVAGO**  
TECHNOLOGIES

 **EBV Elektronik**  
| An Avnet Company |

section 9 | LED DISPLAYS AND SIGNS

**MODULES FOR SIGNAGE  
BACKLIGHTING**

Aladdin Lighting Technologies Inc



**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
Beta Opto Technology Co Ltd  
BG-LED.com  
Bitro Group Inc  
Boca Flasher  
Brite-LED Optoelectronics Inc  
CAO Group Inc  
Coolux Electro-optics Co Ltd  
**EBV Elektronik**  
■ See ad on page 101  
EcoTek Lighting  
Edgelit Acrylics LLC  
EFFLED  
Ekta



**Everlight Electronics Co Ltd**  
■ See ad on page 11

Fawoo Technology Co Ltd  
Fobsun Electronics Ltd



**Fusion Optix**  
■ See ad on page 32


**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Hana Vision



**Heatron Inc**

International Light  
JENOPTIK Polymer Systems GmbH  
JGA Associates/Bulbwizards  
Kingbright Corp  
Konka LED  
[LEDcentre.uk.com](http://LEDcentre.uk.com)  
LED Concepts  
LED Screens Pty Ltd  
LEDtronics Inc  
LEDvista Ltd  
LED Waves  
LG Innotek

Ligitek Electronics Co Ltd  
Lumi Lime Ltd



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Maxx LED Inc  
Mimaki ECO Lighting Solutions  
MSC Vertriebs GmbH  
MTEC GmbH  
National LED Direct  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
NET LED Lighting



**Nu Horizons Electronics**  
An Arrow Company  
■ See ad on page 15

Opulent Technologies Inc  
Outwater Plastics Industries Inc  
Permlight for Signs  
Rosco Laboratories Inc  
Sagitaro Lighting SLU  
Selectronic



**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen MR Photoelectricity Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd (UK)  
Taiwan Oasis Technology Co Ltd  
UBLeds Co Ltd  
VAOPTO  
Wamco Inc  
Wessel LED Lighting Systems



**YUYANG DNU Co Ltd**  
■ See ad on page 4

YYZ Systems Inc


**RENTAL COMPANIES**

ATG Electronics Corp  
CT Creative Technology  
Ekta  
LEDvista Ltd  
MultiMedia Farms

Neoti  
Power Audiovisual Rental Co  
RGB Lights  
Shenzhen LCF Tec Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Top Technology Co Ltd  
UNI-EE Electric Appliance Co Ltd  
Unilumin Group Co Ltd

**SEMI-TRANSPARENT DISPLAYS**

AC Entertainment Technologies Ltd  
Bitro Group Inc  
CD2 BV  
Creative Technology US  
DigitaLicht AG  
Ekta  
Electrobrain Enterprises  
Illumination Optics Inc  
JiaYao Industries Co Ltd  
LEDvista Ltd  
Logolight



**Lynk Labs Inc**  
■ See ad on page 6

Macroblock Inc  
Neo-Neon LED Lighting International Ltd  
Opto Tech Corp  
Permlight for Signs  
RGB Lights  
Salient Pty Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Shenzhen Top Technology Co Ltd  
Taiwan Oasis Technology Co Ltd  
Wessel LED Lighting Systems

**VARIABLE MESSAGE SIGNS**

Allied Electronics  
ATG Electronics Corp  
Bitro Group Inc  
CS Bright Corp  
DST  
Ekta  
Electrobrain Enterprises  
Fawoo Technology Co Ltd  
Fobsun Electronics Ltd  
Guang Li-Light Power Technology  
Hana Vision  
JD Greentech-Global Inc  
JiaYao Industries Co Ltd  
[KustomXpress.com](http://KustomXpress.com)  
LEDvista Ltd  
Logolight  
Macroblock Inc  
Maxx LED Inc  
Nav-comm  
Neo-Neon LED Lighting International Ltd  
NES Light  
Opto Tech Corp  
Retop LED Display Co Ltd  
Selectronic



section 9 | LED DISPLAYS AND SIGNS

Shenzhen Absen Industry Co Ltd  
Shenzhen Jiuzhou Optoelectronics  
Shenzhen Lamp Technology Co Ltd  
Shenzhen MR Photoelectricity Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Tally Display Corp  
VAOPTO  
viviLED Display Co  
Vviviway Optoelectronic Technology Co Ltd  
Wessel LED Lighting Systems  
World of Lights LED Solutions Inc

Hamamatsu Corp  
High Power Lighting Corp  
Hirose Electric Co Ltd  
International Light  
Lextar Electronics Corp  
LG Innotek  
Light Ocean Technology Corp  
Luminit

**BACKLIGHTING & PROJECTION**

**BACKLIGHT UNITS (BLUS) AND COMPONENTS FOR LCDS**



**American Bright Optoelectronics Corp**  
■ See ad on page 17



**Carclo Technical Plastics Ltd**  
■ See ad on page 30

ChiHua Lighting Technology Co Ltd  
Coolux Electro-optics Co Ltd  
Digi-Key Corp  
Edge Electronics Inc  
Edgelit Acrylics LLC



**Edison Opto Corp**  
■ See ad on page 21



**Everlight Electronics Co Ltd**  
■ See ad on page 11



**Fusion Optix**  
■ See ad on page 32



**Global Lighting Technologies**  
■ See ad on page 71



**Lynk Labs Inc**  
■ See ad on page 6

NES Light



**Nu Horizons Electronics**  
■ See ad on page 15



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

Selectronic



**SEOUL SEMICONDUCTOR**  
**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87

Spark LED Lighting (HK) Co Ltd  
Taiwan Oasis Technology Co Ltd  
TAOS Inc  
TPL Vision  
UNI-EE Electric Appliance Co Ltd  
UPEC Electronics Corp  
VAOPTO  
Wellypower Optronics Co



**YUYANG DNU Co Ltd**  
■ See ad on page 4

**DRIVERS FOR LCD BACKLIGHTING**

**Allegro Microsystems Inc**

■ See ad on page 57  
Allied Electronics



**AnalogicTech**

Arrow Electronics EMEA  
Coolux Electro-optics Co Ltd  
Digi-Key Corp  
Diodes Inc  
Edge Electronics Inc  
Endicott Research Group (ERG) Inc  
Exclara  
FSP Group USA  
GlacialLight  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Green Mark Inc  
Kolektor Magma doo  
LED Lighting Power Supplies  
Linear Technology  
Macroblock Inc



**Microsemi Corp**



**Nu Horizons Electronics**  
■ See ad on page 15

On Semiconductor  
Prema Semiconductor GmbH  
Raled LLC



**RECOM Power Inc**  
■ See ad on page 49



**Sharp Microelectronics Europe**  
■ See ad on page 87

STMicroelectronics Inc

section 9 | LED DISPLAYS AND SIGNS



**TEXAS INSTRUMENTS**  
Texas Instruments

**TOSHIBA**  
Leading Innovation >>>  
Toshiba Electronics Europe  
■ See ad on page 64

UNI-EE Electric Appliance Co Ltd




**YUYANG DNU Co Ltd**  
■ See ad on page 4

**LIGHT SOURCES FOR PROJECTION SYSTEMS**



**Alpha-One Electronics Ltd**



**AMERICAN BRIGHT OPTOELECTRONICS CORP.**  
American Bright Optoelectronics Corp  
■ See ad on page 17

ATG Electronics Corp  
Digi-Key Corp  
Digital Projection Inc  
Dongguan Jingliang Lighting Factory  
**EBV Elektronik**  
■ See ad on page 101  
Epi-Light Ltd

**EVERLIGHT**  
Everlight Electronics Co Ltd  
■ See ad on page 11

Goldeneye Inc  
Greenlight Optics LLC



**Heatron Inc**

High Power Lighting Corp  
Linear Technology  
opsira GmbH



**Optocore Ltd**

**OSRAM**  
Opto Semiconductors  
OSRAM Opto Semiconductors GmbH  
■ See ad on page 67

**LUXE N**  
never before possible  
Philips Lumileds Lighting  
■ See ad on page 2



*ProLight Opto*  
[www.prolightopto.com](http://www.prolightopto.com)  
ProLight Opto Technology Corp



**SEOUL SEMICONDUCTOR**  
Seoul Semiconductor  
■ See ad on front cover

Spark LED Lighting (HK) Co Ltd  
Taiwan Oasis Technology Co Ltd  
UNI-EE Electric Appliance Co Ltd  
Upstream Engineering Inc  
VAOPTO

**OPTICAL MATERIALS & COMPONENTS**



**Alpha-One Electronics Ltd**

**Bayer MaterialScience LLC**  
■ See ad on page 33  
Brewer Science Inc



**carclo**  
technical plastics  
Carclo Technical Plastics Ltd  
■ See ad on page 30

Coolux Electro-optics Co Ltd  
Dymax Corp  
Ellsworth Adhesives  
EMD Chemicals Inc



**Fusion Optix**  
■ See ad on page 32

JENOPTIK Polymer Systems GmbH  
**Labsphere Inc**  
■ See ad on page 44  
LeddarTech  
Lextar Electronics Corp  
LG Innotek  
Lightscape Materials Inc  
Lumi Lime Ltd  
Luminit  
LuxInTec SL  
Materion Corp  
Multiwave Corp

**NU HORIZONS ELECTRONICS**  
An Arrow Company  
**Nu Horizons Electronics**  
■ See ad on page 15

Phostech Optical Consulting & Patent Services

**proto labs**<sup>®</sup>  
Real Parts. Really Fast.<sup>™</sup>  
**Proto Labs Inc**  
■ See ad on page 37



**PTH Group**

Shenzhen Jiuzhou Optoelectronics  
Suncolor Corp  
Sycamore Glass Components  
Taiwan Oasis Technology Co Ltd  
TAOS Inc  
TT electronics Optoelectronic Business Unit  
UNI-EE Electric Appliance Co Ltd  
Wavelength Electronics Inc  
WhiteOptics  
ZC&R Coatings for Optics

# THE LED SHOW™

31 JULY – 1 AUGUST 2012  
RIO ALL SUITE HOTEL & CASINO  
LAS VEGAS, NEVADA, USA  
[www.theledshow.com](http://www.theledshow.com)

BOOK EXHIBIT  
SPACE OR REGISTER FOR  
EARLY BIRD RATES  
OVER 3,000 ATTENDEES IN 2011

## THE LEADING EVENTS FOR THE GLOBAL LED & LIGHTING INDUSTRY

### JOIN THE BEST AND BRIGHTEST!

LED manufacturers from all over the world will gather in Las Vegas to showcase the latest LED technology. The LED Show draws an exclusive group of buyers from every subset of this increasingly important and burgeoning industry. Exhibitors have the opportunity to provide demonstrations, display products, provide technical support, and inspire new design ideas to an engaged and influential attendee audience. As a "manufacturer", your customers will come with questions and interest. As an "attendee", you will have the opportunity to ask questions and dispel any myths about LED lighting. Participants will find all the latest tools and technology to design smarter and more efficiently.

For more information visit [www.theledshow.com](http://www.theledshow.com)

To book your exhibition space or for more information on sponsorship opportunities please contact your local sales representative:

#### US - West Coast

Tim Carli  
+1 650 946 3163  
tcarli@pennwell.com

#### US - East Coast

Mary Donnelly  
+1 603 891 9398  
maryd@pennwell.com

#### Europe and China

Virginia Willis  
+44 0 1992 656 663  
virginia.willis@pennwell.com

#### Director of Content

The LED Show  
James Highgate  
T: +1 702 475 5337  
E: Jamesh@pennwell.com



Premium Exhibitors 2012: Chroma Systems Solutions, Inc., Emerge Lighting, Lumenor Energy Services LLC, LUMIMAX OPTOELECTRONIC TECHNOLOGY, Philips Emergency Lighting, Sansitech USA, SinkPAD Corporation, TOROSYSTEM, Virginia Optoelectronics Inc. (As of Dec. 11)

Owned and Produced by:



Presented by:



Supported by:



Events:



# TAIWAN INT'L TILS LIGHTING SHOW



## Exhibits Profile

- Household Lighting
- Commercial Lighting
- Industrial Lighting
- Office Lighting
- Outdoor Lighting
- LED Technology
- Lighting Accessories, Parts & Components
- Light Control, Management and Measurement Systems
- Light Production and Measurement Equipment
- Test & Inspection Equipment

**Next year, TILS shines even brighter as it hosts the GLF & CIE-Taiwan annual meetings!**

**MAR. 13-16**  
**2012**

Taipei World Trade Center Exhibition Hall 1

[www.TILS.com.tw](http://www.TILS.com.tw)



Sponsor:



Bureau of Foreign Trade, MOEA

Organizers:



TAITRA

[www.taipeitradeshows.com.tw](http://www.taipeitradeshows.com.tw)



TLFEA

[www.lighting.org.tw](http://www.lighting.org.tw)

# SECTION 10

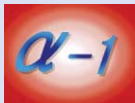
# LEDs MAGAZINE

## OTHER APPLICATIONS

### MEDICAL & INDUSTRIAL LIGHTING

#### INSPECTION LIGHTING

Advanced illumination  
Aladdin Lighting Technologies Inc



Alpha-One Electronics Ltd



American Bright Optoelectronics Corp  
■ See ad on page 17

Coolux Electro-optics Co Ltd  
Cool-View  
Delta Light  
Dolan-Jenner Industries



Ecomaa Lighting Inc

EO Lighting  
Excelitas Technologies Corp  
Fiberguide Industries Inc  
GlacialLight  
Golden Polymer Extrusion Technology Co Ltd  
Hamamatsu Corp



Heatron Inc

Illumination Optics Inc  
[LDDLIGHT.com](http://LDDLIGHT.com) - LDD Trading Associates LLC

LEDtronics Inc  
LuxInTec SL  
PerkinElmer Inc  
ProPhotonix Ltd  
Quasar Light Co Ltd  
Spark LED Lighting (HK) Co Ltd  
Spectrum Illumination  
VAOPTO

#### MACHINE VISION LIGHTING

Advanced illumination



Alpha-One Electronics Ltd



American Bright Optoelectronics Corp  
■ See ad on page 17

Coolux Electro-optics Co Ltd  
Diana Electronic-Systeme GmbH  
Digitalicht AG  
Dolan-Jenner Industries  
Elkays Electronics  
EO Lighting  
Epi-Light Ltd  
Excelitas Technologies Corp  
Fiberguide Industries Inc



Fusion Optix  
■ See ad on page 32

GlacialLight  
Golden Polymer Extrusion Technology Co Ltd  
Hamamatsu Corp



Heatron Inc

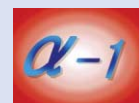
Illumination Optics Inc  
INOV Optical Development  
i-vision Lighting Solutions Ltd  
[LDDLIGHT.com](http://LDDLIGHT.com) - LDD Trading Associates LLC  
Lightspeed Technologies Inc  
LuxInTec SL  
Marktech Optoelectronics  
Operations Technology Inc  
PerkinElmer Inc  
ProPhotonix Ltd  
Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
SCHOTT North America Inc  
Shanghai BMT Automation  
Spark LED Lighting (HK) Co Ltd  
Spectrum Illumination  
TPL Vision  
UNI-EE Electric Appliance Co Ltd



USHIO America

VAOPTO  
Wilbrecht Ledco Inc

#### MEDICAL & DENTAL LIGHTING



Alpha-One Electronics Ltd

section 10 | OTHER APPLICATIONS



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Bazi (Thailand) Co Ltd  
Carley Lamps  
[www.CommercialEcoLights.com](http://www.CommercialEcoLights.com)  
Coolux Electro-optics Co Ltd  
Cool-View  
DMX LED Lights  
Dolan-Jenner Industries  
Emergence Technology Consultants LLC  
EO Lighting  
Estar LED Light Co Ltd  
EXALOS  
Excelitas Technologies Corp  
Fiberguide Industries Inc



**Fusion Optix**  
■ See ad on page 32

FUTURELED GmbH  
Hamamatsu Corp



**Heatron Inc**

Illumination Optics Inc  
INOV Optical Development  
JENOPTIK Polymer Systems GmbH  
Kingbright Corp  
LED Concepts  
LED Eco Lights  
Lextar Electronics Corp  
Lumicrest Lighting Solutions Inc  
LuxInTec SL  
Medical Lighting Systems  
Neon-LED International (HK) Ltd  
Norlux  
opsira GmbH



**Opto Diode Corp**

PerkinElmer Inc  
ProPhotonix Ltd  
Rayconn Electronics Co Ltd  
SCHOTT North America Inc

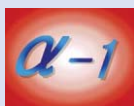
Selectronic  
Spark LED Lighting (HK) Co Ltd



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

UNI-EE Electric Appliance Co Ltd  
VAOPTO  
Wilbrecht Ledco Inc  
ZMDI - Zentrum Mikroelektronik Dresden

**PHOTOTHERAPY LIGHTING**



**Alpha-One Electronics Ltd**



**Amphenol LTW Technology Co Ltd**

Cool-View  
Delta Light  
Design LED Products  
Excelitas Technologies Corp  
Fiberguide Industries Inc  
GlacialLight



**Heatron Inc**

LuxInTec SL  
Medical Lighting Systems  
Norlux



**Opto Diode Corp**

PerkinElmer Inc  
Quasar Light Co Ltd  
UNI-EE Electric Appliance Co Ltd  
VAOPTO

**UV CURING LIGHTS**

Bachur & Associates  
Coolux Electro-optics Co Ltd  
Delta Light

Digital Light Lab  
Dymax Corp  
Epi-Light Ltd  
Estar LED Light Co Ltd  
Excelitas Technologies Corp  
Fiberguide Industries Inc  
FUTURELED GmbH  
Hamamatsu Corp



**Heatron Inc**



**INNOVATIONS IN OPTICS**

**Innovations in Optics Inc**

LEDtronics Inc  
LumiCe Co Ltd  
LuxInTec SL  
Optotek Ltd  
OSA Opto Light GmbH  
PerkinElmer Inc  
ProPhotonix Ltd  
Strataplex Inc

**MOBILE APPLIANCES**

**DRIVERS FOR MOBILE APPLICATIONS**

3DZ Ltd



**AnalogicTech**

ChromeLED Corp  
Digi-Key Corp  
Diodes Inc  
Edge Electronics Inc  
Exclara  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Macroblock Inc



**Magtech Industries Corp**

section 10 | OTHER APPLICATIONS



**Microsemi Corp**

National Semiconductor



**Nu Horizons Electronics**  
An Arrow Company


**Nu Horizons Electronics**  
■ See ad on page 15

On Semiconductor



**Sharp Microelectronics Europe**  
■ See ad on page 87


STMicroelectronics Inc



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

**LEDs FOR CAMERA FLASH**

3DZ Ltd



**American Bright Optoelectronics Corp**  
■ See ad on page 17

**EBV Elektronik**  
■ See ad on page 101



**Edison Opto Corp**  
■ See ad on page 21



**Everlight Electronics Co Ltd**  
■ See ad on page 11



**Heraeus Materials Technology Gmbh & Co KG**  
■ See ad on page 41


High Power Lighting Corp  
LG Innotek  
Lightspeed Technologies Inc  
Nichia America Corp



**Nu Horizons Electronics**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

NXP Semiconductors



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67



never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

ROHM Semiconductor USA LLC




**Seoul Semiconductor**  
■ See ad on front cover



**Sharp Microelectronics Europe**  
■ See ad on page 87


Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd (UK)



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

VAOPTO

**LEDs FOR KEYPAD/LCD BACKLIGHTING**



**American Bright Optoelectronics Corp**  
■ See ad on page 17

Digi-Key Corp  
**EBV Elektronik**  
■ See ad on page 101



**Everlight Electronics Co Ltd**  
■ See ad on page 11



**Fusion Optix**  
■ See ad on page 32

High Power Lighting Corp  
Kingbright Corp  
LEDtronics Inc  
LG Innotek  
Lightscape Materials Inc  
Ligitek Electronics Co Ltd  
Nichia America Corp



**Nu Horizons Electronics**  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

NXP Semiconductors



**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

ROHM Semiconductor USA LLC  
Selectronic



**Seoul Semiconductor**  
■ See ad on front cover

section 10 | OTHER APPLICATIONS

# SHARP

**Sharp Microelectronics Europe**  
■ See ad on page 87

Shenzhen Jiuzhou Optoelectronics  
Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd (UK)

# TOSHIBA

**Leading Innovation >>>**

**Toshiba Electronics Europe**  
■ See ad on page 64

VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4

## OLEDs & EL LIGHT SOURCES

Digi-Key Corp  
EMD Chemicals Inc



**Konica Minolta Sensing Americas Inc**

# NU HORIZONS ELECTRONICS

An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

Selectronic

## SIGNAL LIGHTING

### BEACONS, EMERGENCY DIRECTIONAL AIDS

Allied Electronics

# AMERICAN BRIGHT OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
BE Lite Technologies  
Carmanah Technologies Corp  
Dialight Corp  
DMX LED Lights  
Eco Marketing  
Excelitas Technologies Corp  
Golden Sources (HK) Ltd



**Heatron Inc**

Illumination Optics Inc



INNOVATIONS IN OPTICS

**Innovations in Optics Inc**

JW Speaker Corp  
LEDs N Solar  
LEDtronics Inc  
Liteon France  
LuxInTec SL  
Nav-comm  
Neo-Neon LED Lighting International Ltd  
PerkinElmer Inc  
RenovaSolar Lda  
Selectronic  
Smitties Lights and Sirens  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd

# SUNON®

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4

## RAILROAD, MARINE, AIRPORT SIGNALS

Allied Electronics

# AMERICAN BRIGHT OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
Eco Marketing  
Excelitas Technologies Corp  
Fulsun Led Display  
GlacialLight  
Golden Sources (HK) Ltd



**Heatron Inc**

Illumination Optics Inc  
LEDs N Solar  
LEDtronics Inc  
Leotek Electronics USA Corp  
Liteon France  
LuxInTec SL  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
Opto Tech Corp  
PerkinElmer Inc  
Quasar Light Co Ltd  
Selectronic  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd

# SUNON®

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Tally Display Corp  
UNI-EE Electric Appliance Co Ltd  
VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4



section 10 | OTHER APPLICATIONS

**ROADWAY MARKING & SAFETY LIGHTING**

Allied Electronics



**American Bright Optoelectronics Corp**  
■ See ad on page 17

**Amphenol LTW**

**Amphenol LTW Technology Co Ltd**

- Archipelago Lighting
- ATG Electronics Corp
- Beacon Concepts
- Carmanah Technologies Corp
- Excelitas Technologies Corp
- Fiberdyne Energy/Edison LED
- Golden Sources (HK) Ltd



**Heatron Inc**

Illumination Optics Inc



**Konica Minolta Sensing Americas Inc**

- LEDs N Solar
- LEDtronics Inc
- Leotek Electronics USA Corp
- Ligitek Electronics Co Ltd
- Liteon France
- LuxInTec SL
- Neo-Neon LED Lighting International Ltd
- PerkinElmer Inc
- Quasar Light Co Ltd
- Rayconn Electronics Co Ltd
- RenovaSolar Lda

Selectronic  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111

- Shenzhen Lamp Technology Co Ltd
- Smitties Lights and Sirens
- Spark LED Lighting (HK) Co Ltd



**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

- UNI-EE Electric Appliance Co Ltd
- US Eco-Light
- VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4



**Build Better Earth**

*Better Heat Dispatch  
Best Solid Structure  
Eco-friendly Design*



UL LED Street Light



LED Tunnel/Flood Light




LED Traffic Light

[www.bbeled.com](http://www.bbeled.com)  
+86 138 2317 7749  
[jasonyang@bbeled.com](mailto:jasonyang@bbeled.com)

section 10 | OTHER APPLICATIONS

**TRAFFIC & PEDESTRIAN SIGNALS**

Allied Electronics



**AMERICAN BRIGHT**  
OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
BE Lite Technologies  
Boca Flasher  
CooLED Ltd  
Dialight Corp

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excelitas Technologies Corp  
Excellence Opto Inc  
Fulsun Led Display  
Gautam Polymers  
GlacialLight  
Golden Sources (HK) Ltd  
Guang Li-Light Power Technology



**Heatron Inc**

Hokuriku Malaysia Sdn Bnd  
Illumination Optics Inc  
LEDs N Solar  
LEDtronics Inc  
LED Waves  
Leotek Electronics USA Corp  
Ligitek Electronics Co Ltd  
Liteon France  
LuxInTec SL  
Macroblock Inc  
Neo-Neon LED Lighting International Ltd  
Opto Tech Corp  
Quasar Light Co Ltd  
RenovaSolar Lda  
Selectronic  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111  
Shenzhen Lamp Technology Co Ltd  
Spark LED Lighting (HK) Co Ltd

**SUNON®**

Sunonwealth Electric Machine Industry Co Ltd  
■ See ad on page 1

UNI-EE Electric Appliance Co Ltd  
US Eco-Light  
VAOPTO



**YUYANG DNU Co Ltd**  
■ See ad on page 4

**VEHICLE LIGHTING**

**DRIVERS FOR VEHICLE LIGHTING**

**Allegro MicroSystems Inc**  
■ See ad on page 57

**Amphenol LTW**

**Amphenol LTW Technology Co Ltd**

Digi-Key Corp  
Diodes Inc  
Eco Marketing  
Exclara  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
Infineon Technologies AG  
Kara Jalmarit International Ltd  
Kolektor Magma doo  
LuxInTec SL



**Magtech Industries Corp**



**Microsemi Corp**

**NU HORIZONS**  
ELECTRONICS  
An Arrow Company

**Nu Horizons Electronics**  
■ See ad on page 15

On Semiconductor  
Orient Lighting Co Ltd  
Prema Semiconductor GmbH  
Quasar Light Co Ltd  
Raled LLC



**RECOM Power Inc**  
■ See ad on page 49

STMicroelectronics Inc

**SUNON®**

Sunonwealth Electric Machine Industry Co Ltd  
■ See ad on page 1



**TEXAS INSTRUMENTS**

Texas Instruments

**TOSHIBA**


**Leading Innovation >>>**

**Toshiba Electronics Europe**  
■ See ad on page 64

UNI-EE Electric Appliance Co Ltd

**LEDs & MODULES FOR VEHICLE LIGHTING**

3M



**AMERICAN BRIGHT**  
OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
Boca Flasher  
Delta Light  
Digi-Key Corp  
D-LED Illumination Technologies  
Dominant Opto Technologies  
Dominio LED  
**EBV Elektronik**  
■ See ad on page 101  
Enertrail Technology Co Ltd  
ETEC Lighting Co Ltd

section 10 | OTHER APPLICATIONS

**EVERLIGHT**

**Everlight Electronics Co Ltd**  
■ See ad on page 11

Excellence Opto Inc  
Fiberdyne Energy/Edison LED

**FUTURE**  
Lighting Solutions  
*Making LED Lighting Solutions Simple™*

**Future Lighting Solutions**  
■ See ad on page 62

GlacialLight  
Golden Sources (HK) Ltd  
**GRE Alpha Electronics Ltd**  
■ See ad on page 18  
High Power Lighting Corp  
Hokuriku Malaysia Sdn Bnd  
Kara Jalmarit International Ltd

**LEDdynamics**  
*what a bright idea*

**LEDdynamics Inc**

LEDIKO  
LEDtronics Inc  
LG Innotek  
LuxInTec SL  
Nav-comm  
Neo-Neon LED Lighting International Ltd  
Nichia America Corp

**NU HORIZONS**  
ELECTRONICS  
*An Arrow Company*

**Nu Horizons Electronics**  
■ See ad on page 15

**optocore**

**Optocore Ltd**

Orient Lighting Co Ltd

**OSRAM**  
Opto Semiconductors

**OSRAM Opto Semiconductors GmbH**  
■ See ad on page 67

L U X E N<sup>®</sup>

never before possible

**Philips Lumileds Lighting**  
■ See ad on page 2

**proto labs**<sup>®</sup>

Real Parts. Really Fast.™

**Proto Labs Inc**  
■ See ad on page 37

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Saniltech Co Ltd  
SCHOTT North America Inc  
Selectronic

**SEOUL**

**SEOUL SEMICONDUCTOR**

**Seoul Semiconductor**  
■ See ad on front cover

Shenzhen Jiuzhou Optoelectronics  
Shenzhen MR Photoelectricity Co Ltd  
**Signcomplex Ltd**  
■ See ad on page 75  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd

**SUNON**<sup>®</sup>

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Talon Aerospace

**TOSHIBA**

**Leading Innovation >>>**

**Toshiba Electronics Europe**  
■ See ad on page 64

VAOPTO  
Wilbrecht Ledco Inc

**VEHICLE LIGHTING (HEADLAMPS,  
TAIL LIGHTS ETC)**  
AAA OEM & ODM Ltd

**AMERICAN BRIGHT**  
OPTOELECTRONICS CORP.

**American Bright Optoelectronics Corp**  
■ See ad on page 17

ATG Electronics Corp  
Beacon Concepts  
Beadlight  
CyberBiota Inc  
DMK USA Inc  
Enertrail Technology Co Ltd  
Golden Sources (HK) Ltd  
High Power Lighting Corp  
Illumination Optics Inc  
JW Speaker Corp  
Kara Jalmarit International Ltd

**KONICA MINOLTA**  
SENSING AMERICAS, INC.

**Konica Minolta Sensing Americas Inc**

The LED Shop  
Linear Technology  
LuxInTec SL  
National LED Direct  
Nav-comm  
Neo-Neon LED Lighting International Ltd  
Neon-LED International (HK) Ltd  
Opto Tech Corp  
Protect-R-Shield

**proto labs**<sup>®</sup>

Real Parts. Really Fast.™

**Proto Labs Inc**  
■ See ad on page 37

Quasar Light Co Ltd  
Rayconn Electronics Co Ltd  
Selectronic  
**Shenzhen Bang-Bell Electronics**  
■ See ad on page 111  
SoundOff Signal  
Spark LED Lighting (HK) Co Ltd  
Stanley Electric Co Ltd (UK)

**SUNON**<sup>®</sup>

**Sunonwealth Electric Machine Industry Co Ltd**  
■ See ad on page 1

Talon Aerospace  
TOP LED Ltd  
VAOPTO

# DIRECTORY

# LEDs MAGAZINE

## COMPANY DIRECTORY

### 100 West Electronics

Winchester, CT, USA, [www.100west.com](http://www.100west.com)

### 3DZ Ltd

Chippenham, Wiltshire, UK, [www.nmsys.co.uk](http://www.nmsys.co.uk)

### 3elamp

Central, Hong Kong, [www.3elamp.com](http://www.3elamp.com)

### 3M

St Paul, MN, USA, [www.3m.com/lighting](http://www.3m.com/lighting)

### AAA OEM & ODM Ltd

Kowloon, Hong Kong, [www.aaaoemodm.com](http://www.aaaoemodm.com)

### Abacus Lighting Ltd

Sutton-in-Ashfield, Nottinghamshire, UK,  
[www.abaculighting.com](http://www.abaculighting.com)

### Abrisa Industrial Glass

Santa Paula, CA, USA, [www.abrisa.com](http://www.abrisa.com)

### Abrisa Technologies

Santa Paula, CA, USA,  
[www.abrisatechnologies.com](http://www.abrisatechnologies.com)

### ACC Silicones Europe

Bridgwater, Somerset, UK,  
[www.acc-silicones.com](http://www.acc-silicones.com)

### Accuratus Corp

Phillipsburg, NJ, USA, [www.accuratus.com](http://www.accuratus.com)

### AC Electronics

Arlington, TX, USA, [www.ace-ballast.com](http://www.ace-ballast.com)

### AC Entertainment Technologies Ltd

High Wycombe, UK, [www.ac-et.com](http://www.ac-et.com)

### Acoya Illumination

Dongguan, China, [www.acoya.com.tw](http://www.acoya.com.tw)

### Adelto Ltd

Hong Kong, [www.adelto.com](http://www.adelto.com)

### Adept Optical

New Territories, Hong Kong,  
[www.adept-optical.com](http://www.adept-optical.com)

### Advanced illumination

Rochester, VT, USA,  
[www.advancedillumination.com](http://www.advancedillumination.com)

### Advanced Interconnections Corp

West Warwick, RI, USA, [www.advanced.com](http://www.advanced.com)

### Advanced LEDs Ltd

Coventry, UK, [www.advanced-led.com](http://www.advanced-led.com)

### Advanced LED Technology Ltd

Newcastle upon Tyne, Tyne and Wear, UK,  
[www.advanced-led-technology.com](http://www.advanced-led-technology.com)

### Advanced Menu Systems

Santa Ana, CA, USA,  
[www.advancedmenusystems.com](http://www.advancedmenusystems.com)

### Advanced Thermal Devices Inc

New Taipei City, Taiwan, [www.atdi-web.com](http://www.atdi-web.com)

### Advanced Thermal Solutions Inc

Norwood, MA, USA, [www.qats.com](http://www.qats.com)

### AEG Power Solutions (France) SAS

Lannion, France, [www.aegps.com/led](http://www.aegps.com/led)



### Aeon Lighting Technology Inc

16F-8 No 2 Jian Ba Rd, Chung Ho City, Taipei  
County 235 Taiwan, TEL: 886 2 8226 1289,  
[info@aeonlighting.com](mailto:info@aeonlighting.com),  
[www.aeonlighting.com](http://www.aeonlighting.com)

#### ■ See ad on page 27

Manufactures innovative, eco-friendly, energy-saving, premium quality lamps using LED technology. With outstanding heat dissipation design, sells in more than 100 countries across the world. The company currently offers various LED lighting products, including indoor and outdoor products. All products have been verified by major international safety certification institutions, such as UL, CE, FCC, TUV, and ETL. Established in 2007.

### AG Materials Inc

Taoyuan, Taiwan, [www.agmaterials.com](http://www.agmaterials.com)

### Aimtec

Vaudreuil-Dorion, QC, Canada,  
[www.aimtec.com](http://www.aimtec.com)

### AIXTRON SE

Herzogenrath, Germany, [www.aixtron.com](http://www.aixtron.com)

### Aladdin Lighting Technologies Inc

Clarksville, TN, USA, [www.aladdinltg.com](http://www.aladdinltg.com)

### ALANOD Aluminium

Ennepetal, Germany, [www.alanod.com](http://www.alanod.com)

### Alder Optomechanical Corp

Taoyuan, Taiwan, [www.alder.com.tw](http://www.alder.com.tw)

### Alhacen Light

Teaneck, NJ, USA, [www.alhacenlight.com](http://www.alhacenlight.com)

### Allaey's LED Instruments NV

Waregem, Belgium, [www.allaey's.com](http://www.allaey's.com)

### All Brite International Co Ltd

Tainan City, Taiwan, [www.all-brite-intl.com](http://www.all-brite-intl.com)

### ALLEDS Lighting Corp

Wayland, MA, USA, [www.alleds.com](http://www.alleds.com)

### Allegro MicroSystems Inc

115 Northeast Cutoff, Worcester, MA 01606  
USA, TEL: 1 508 853 5000,  
FAX: 1 508 853 7895,  
[sales@allegromicro.com](mailto:sales@allegromicro.com),  
[www.allegromicro.com](http://www.allegromicro.com)

#### ■ See ad on page 57

Offers an LED driver IC portfolio with a wide variety of topologies, channel counts, output currents and feature sets to help customers optimize their solutions. Drivers are targeted at either LED lighting applications or LED backlighting for LCD displays. Innovative, system-level solutions provide highly robust and fault-tolerant performance while balancing overall solution cost. Automotive voltage and temperature ratings are also available.

### Alliance Optotek Corp

Chupey City, Hsinchu, Taiwan, [www.aoptk.com](http://www.aoptk.com)

### Allied Electronics

Ft Worth, TX, USA, [www.alliedelec.com](http://www.alliedelec.com)

### Allied Industrial Marketing

Cedarburg, WI, USA,  
[www.alliedindustrialmarketing.com](http://www.alliedindustrialmarketing.com)

## alpha<sup>®</sup> LED Technologies

### Alpha LED Technologies

109 Corporate Blvd, South Plainfield,  
NJ 07080 USA, TEL: 1 908 791 3045,  
[pcote@cooksonelectronics.com](mailto:pcote@cooksonelectronics.com),  
[www.alpha.cooksonelectronics.com](http://www.alpha.cooksonelectronics.com)

#### ■ See ad on page 59

Provides high performance materials, chemistry and technology solutions to the electronics and surface finishing industries worldwide.



**Alpha-One Electronics Ltd**  
2-8-41 Chuoh, Ebina-city, Kanagawa  
243-0432 Japan, TEL: 81 46 292 7111,  
FAX: 81 46 292 7113, [info@alpha1-eg.com](mailto:info@alpha1-eg.com),  
[www.alpha1-eg.com](http://www.alpha1-eg.com)

Supplies high-quality and high-power LEDs with wide range of spectral peaks from ultraviolet to infrared rays in various packages. Main application is a light source of optical sensors for individual identification systems, image detection, medical analysis, data transmission and especially for CCD cameras in surveillance system. Custom multi-chip packaged LED is also available.

#### Alpha View

Dublin, Ireland, [www.alphaview.ie](http://www.alphaview.ie)

#### ALSI - Advanced Laser Separation International NV

Beuningen, The Netherlands,  
[www.alsi-international.com](http://www.alsi-international.com)

#### Aluwave AB

Mölnådal, Sweden, [www.aluwave.com](http://www.aluwave.com)

#### America II Electronics Inc

St Petersburg, FL, USA, [www.americaii.com](http://www.americaii.com)



**American Bright Optoelectronics Corp**  
13815-C Magnolia Ave, Chino, CA  
91710 USA, TEL: 1 909 628 5050,  
FAX: 1 909 628 5006,  
[aboc@americanbrightled.com](mailto:aboc@americanbrightled.com),  
[www.americanbrightled.com](http://www.americanbrightled.com)

#### ■ See ad on page 17

With a constant focus on product quality and the continuing level of excellence in customer service, Offers reliable quality products at competitive market prices for the optoelectronic and solid state lighting markets.



**American Illumination Inc**  
3767 Overland Ave, Suite 109,  
Los Angeles, CA 90034 USA,  
TEL: 1 310 202 6500, FAX: 1 310 202 6555,  
[Info@american-illumination.com](mailto:Info@american-illumination.com),  
[www.american-illumination.com](http://www.american-illumination.com)

Creates energy efficient LED light engines and modules for modern fixtures, retrofits, indoor and outdoor lighting solutions. By sourcing the best components available, the company is dedicated to providing high-quality and unique LED solutions for OEM's and lighting designers with excellent service and sleek aesthetics.

#### American Opto Plus LED Corp

Pomona, CA, USA, [www.aopled.com](http://www.aopled.com)

#### Amerlux

Fairfield, NJ, USA, [www.amerlux.com](http://www.amerlux.com)

#### Amphenol Industrial Operations

Sidney, NY, USA, [www.amphenol-industrial.com](http://www.amphenol-industrial.com)

## Amphenol LTW

#### Amphenol LTW Technology Co Ltd

9F No 657-12, Jungjeng Rd,  
Shinjuang Dist, New Taipei City 242  
Taiwan, TEL: 886 2 29085626,  
FAX: 886 2 29029787, [sales@ltw-tech.com](mailto:sales@ltw-tech.com),  
[www.amphenolltw.com](http://www.amphenolltw.com)

Manufactures waterproof connectors with innovative design and cutting-edge manufacturing technology. The connectors are designed for harsh environments and obtain the strictest requirements to meet with various international standards. The LED product series is easy mating, quick assembly and comes with impulse resistant cable protection. Has experienced engineers and innovative technology to provide customized design and value-added solutions for customers.

#### AMWEI Thermistor

Shenzhen, Guangdong, China, [www.amwei.com](http://www.amwei.com)



#### AnalogicTech

3230 Scott Blvd, Santa Clara, CA 95054 USA,  
TEL: 1 408 737 4600, FAX: 1 408 737 4611,  
[info@analogictech.com](mailto:info@analogictech.com),  
[www.analogictech.com](http://www.analogictech.com)

Develops advanced semiconductor system solutions that play a key role in the continuing evolution of feature-rich, energy-efficient electronic devices.

#### Andy Optoelectronic Co Ltd

Ningbo, China, [www.ledlighting.cc](http://www.ledlighting.cc)

#### Anything Display Promotional Displays

Amherst, NH, USA, [www.anythingdisplay.com](http://www.anythingdisplay.com)

#### APACK Inc

Daejeon, Korea, [www.apack.net](http://www.apack.net)

#### AppLED BV

Oss, The Netherlands, [www.appled.nl](http://www.appled.nl)

#### Apple Lighting Corp

Tainan, Taiwan, [www.ilight.com.tw](http://www.ilight.com.tw)

#### Apron Teknoloji

Kayseri, Melikgazi, Turkey, [www.ledeca.com](http://www.ledeca.com)

#### APS Novastar

Huntingdon Valley, PA, USA, [www.apsgold.com](http://www.apsgold.com)

#### APS Solutions GmbH

Puchheim-Munich, Germany,  
[www.aps-munich.com](http://www.aps-munich.com)

#### AP Technologies Ltd

Bath, Somerset, UK,  
[www.aptechnologies.co.uk](http://www.aptechnologies.co.uk)

#### Aquadelight

Rumst, Antwerpen, Belgium,  
[www.aquadelight.info](http://www.aquadelight.info)

#### Arani

Montreal, QC, Canada, [www.arani.ca](http://www.arani.ca)

#### Archipelago Lighting

Montclair, CA, USA, [archipelagolighting.com](http://archipelagolighting.com)

#### Architectural FX Ltd

Bracknell, Berkshire, UK,  
[www.architecturalfx.co.uk](http://www.architecturalfx.co.uk)

#### Arctik

Guanggzhou, China, [www.arctik-lighting.com](http://www.arctik-lighting.com)

#### Aries Electronics Inc

Bristol, PA, USA, [www.arieselec.com](http://www.arieselec.com)



#### Arlon LLC

1100 Governor Lea Rd, Bear, DE 19701 USA,  
TEL: 1 302 834 2100, FAX: 1 302 834 4021,  
[dtime@arlon-std.com](mailto:dtime@arlon-std.com),  
[www.arlon-thermal.com](http://www.arlon-thermal.com)

Manufactures precision calendered and extruded silicone rubber materials and thermoset and thermoplastic laminates. Products include Secure, Protect, Bridge, and Mate thermal interface materials and StaCool thermally conductive metal core laminates and prepregs.

#### Armcast Lighting

Baltimore, MD, USA,  
[www.armcastlighting.com](http://www.armcastlighting.com)

#### Armadillo LED

Great Dunmow, Essex, UK,  
[www.armadilloled.com](http://www.armadilloled.com)



#### ARROW ELECTRONICS

#### Arrow Electronics Inc

7459 S Lima St, Englewood, CO  
80112 USA, TEL: 1 888 954 4481,  
[lightingsolutions@arrow.com](mailto:lightingsolutions@arrow.com),  
<http://lighting.arrow.com>

Dedicated to providing LED alternatives to incandescent, halogen and fluorescent lighting. Specializes in providing components to total solutions containing HB-LEDs. The extensive line card, unsurpassed design and supply chain management services, and experienced technical team can help with all solid-state requirements.

#### Arrow Electronics EMEA

Dreieich, Germany, [www.arroweurope.com](http://www.arroweurope.com)

## company directory | ARROYO INSTRUMENTS

**Arroyo Instruments**

San Luis Obispo, CA, USA,  
[www.arroyoinstruments.com](http://www.arroyoinstruments.com)

**A Square Technologies & Services**

Hyderabad, Andhra Pradesh, India,  
[www.asquaretech.in](http://www.asquaretech.in)

**Astra Industries SAL**

Beirut, Lebanon, [www.astralux.com](http://www.astralux.com)

**Astrodyne**

Mansfield, MA, USA, [www.astrodyne.com](http://www.astrodyne.com)

**ATC Semitec Ltd**

Northwich, Cheshire, UK,  
[www.atcsemitec.co.uk](http://www.atcsemitec.co.uk)

**ATG Electronics Corp**

Shanghai, China, [www.atgelectronics.com](http://www.atgelectronics.com)

**Atlanta Light Bulbs**

Tucker, GA, USA, [www.atlantallightbulbs.com](http://www.atlantallightbulbs.com)

**Atmos Lighting Ltd**

Dublin, Ireland, [www.atmoslighting.ie](http://www.atmoslighting.ie)

**Atomeled Lighting**

Bao'an, China, [www.atomeled.com](http://www.atomeled.com)

**Atropa Ltd**

Zagreb, Croatia, [www.atropa.hr](http://www.atropa.hr)

**AT&S AG**

Leoben, Austria, [www.ats.net](http://www.ats.net)

**Auctus Lights Pvt Ltd**

Bangalore, India, [www.auctuslights.com](http://www.auctuslights.com)

**Aurora Circuits**

Aurora, IL, USA, [www.auroracircuits.com](http://www.auroracircuits.com)

**Avago Technologies**

San Jose, CA, USA, [www.avagotech.com](http://www.avagotech.com)

**Avantes BV**

Oude Apeldoornseweg 28, Apeldoorn NL-7333  
NS The Netherlands, TEL: 31 313 670170,  
FAX: 31 313 670179, [info@avantes.com](mailto:info@avantes.com),  
[www.avantes.com](http://www.avantes.com)

Produces, develops, and sells products in the field of fiber-optic spectroscopy, such as spectrometers, light sources, software, fiber optics, and accessories. With almost 20 years experience in the field of fiber-optic spectroscopy, new applications can be realized in industrial, chemical, biomedical, semiconductor, food processing, and other fields.

**AVX Corp**

Fountain Inn, SC, USA, [www.avx.com](http://www.avx.com)

**AWAB Co (EGYLED)**

Cairo, Egypt, [www.egyled.com](http://www.egyled.com)

**Axic Inc**

Santa Clara, CA, USA, [www.axic.com](http://www.axic.com)

**Bachur & Associates**

Santa Clara, CA, USA,  
[www.bachur-n-associates.com](http://www.bachur-n-associates.com)

**BAG Electronics GmbH**

Arnsberg, Germany, [www.bagelectronics.com](http://www.bagelectronics.com)

**Bare Development Inc**

Countryside, IL, USA,  
[www.baredevelopment.com](http://www.baredevelopment.com)

**Barthelme LED Solutions**

Nürnberg, Bavaria, Germany,  
[www.barthelme.eu](http://www.barthelme.eu)

**Bayer MaterialScience LLC**

100 Bayer Rd, Pittsburgh, PA 15205-9741  
USA, TEL: 1 412 777 2000,  
FAX: 1 412 777 3899, [pcinfo@bayer.com](mailto:pcinfo@bayer.com),  
[www.bayermaterialscience.com](http://www.bayermaterialscience.com)

■ See ad on page 33

Produces polymers and high-performance plastics in North America and is part of the global Bayer MaterialScience business. Innovative developments in coatings, adhesive and sealant raw materials, polycarbonates, polyurethanes and thermoplastic urethane elastomers enhance the design and functionality of products in a wide variety of markets, including automotive, construction, electrical and electronics, household and medical industries, and sports and leisure fields.

**Bayer MaterialScience LLC**

Sheffield, MA, USA, [www.sheffieldplastics.com](http://www.sheffieldplastics.com)

**Bazi (Thailand) Co Ltd**

Bangkok, Thailand, 66 870 844174

**BC Renewable Energy**

Chelsea, MI, USA, 1 734 707 3822

**Beacon Concepts**

Windham, NH, USA, [www.beaconconcepts.net](http://www.beaconconcepts.net)

**Beacon Products**

Bradenton, FL, USA, [www.beaconproducts.com](http://www.beaconproducts.com)

**Beadlight**

Witney, Oxfordshire, UK, [www.beadlight.com](http://www.beadlight.com)

**Beautiful Light Technology Corp**

16-2, Dingshanmen, Neighbor12, Jinlan  
Village, Zhongpu Township, Chia-yi  
60665 Taiwan, TEL: 886 5 239 2881,  
FAX: 886 5 2392007, [sales@bltc.com.tw](mailto:sales@bltc.com.tw),  
[www.bltc.com.tw](http://www.bltc.com.tw)

■ See ad on page 79

Focuses on all-in-one lighting solutions of LED lamps. Manufactures high-power LED bulbs for strong capability and unique development in the fields of electronics, optics and thermal management. Provides the global market with a large portfolio of innovative products in power-design, optical, and heat-handling. Inventive designs and development keep the company at the forefront of LED lighting technology.

**BE Lite Technologies**

Gauteng, South Africa, [www.belite.co.za](http://www.belite.co.za)

**BelleFlex Technologies LLC**

Freeport, PA, USA, [www.belleflex.com](http://www.belleflex.com)

**BellNett Technologies**

Wuxi New District, Jiangsu, China,  
[www.bellnett.com](http://www.bellnett.com)

**Bell-southcn Testing Laboratory**

Shenzhen, Guangdong, China,  
[www.bell-southcn.com](http://www.bell-southcn.com)

**Benled Lighting Group**

Shenzhen, China, [www.benled.com](http://www.benled.com)

**Bentham Instruments Ltd**

Reading, Berkshire, UK, [www.bentham.co.uk](http://www.bentham.co.uk)

**The Bergquist Co**

18930 W 78th St, Chanhassen, MN  
55317-9343 USA, TEL: 1 952 835 2322,  
FAX: 1 952 835 0430,  
[webmaster@bergquistcompany.com](mailto:webmaster@bergquistcompany.com),  
[www.bergquistcompany.com](http://www.bergquistcompany.com)

Supplies the world with some of the best-known brands in the business: Sil-Pad thermally-conductive interface materials, Gap Pad electrically insulating and non-insulating gap fillers, Hi-Flow phase change grease replacement materials, Bond-PlyT thermally-conductive adhesive tapes, and Thermal Clad insulated metal substrates. For power LED applications, light output and long life are directly attributable to how well the LEDs are managed thermally. Thermal Clad is an excellent solution for designers.

**Bestlightingbuy.com**

Shenzhen, Guangdong, China,  
[www.bestlightingbuy.com](http://www.bestlightingbuy.com)

**Beta Opto Technology Co Ltd**

Hsinchu, Taiwan, [www.betaoptotech.com](http://www.betaoptotech.com)

**BFI OPTILAS France SAS**

Evry, France, [www.bfioptilas.fr](http://www.bfioptilas.fr)

**BG-LED.com**

Haskovo, Bulgaria, [www.bgled.com](http://www.bgled.com)

**BH Design Plus**

Lake Forest, CA, USA, [www.bhdesignplus.com](http://www.bhdesignplus.com)

**Binay Opto Electronics Pvt Ltd**

Calcutta, West Bengal, India,  
[www.binayled.com](http://www.binayled.com)

**Bingk LED Technology India**

Pune, Maharashtra, India, [www.bingktech.com](http://www.bingktech.com)

**Bingk Technology HK Co Ltd**

Mumbai, Maharashtra, India,  
[www.bingktech.com](http://www.bingktech.com)

**Bitro Group Inc**

Teterboro, NJ, USA, [www.bitrogroup.com](http://www.bitrogroup.com)

**BizriOptics**Damascus, Syria, [www.albizri.com/optics](http://www.albizri.com/optics)**BJB GmbH & Co KG**Arnsberg, Germany, [www.bjb.com](http://www.bjb.com)**BL2BL**Torrance, CA, USA, [www.bl2bl.com](http://www.bl2bl.com)**Black Dog LED**Boulder, CO, USA, [www.blackdogled.com](http://www.blackdogled.com)**Bluegrass LED Lighting LLC**Louisville, KY, USA,  
[www.bluegrassledlighting.com](http://www.bluegrassledlighting.com)**Blue Ridge Numerics (CFdesign)**Charlottesville, VA, USA, [www.cfdesign.com](http://www.cfdesign.com)**BMD Lighting Co Ltd**Xiamen, Fujian, China, [www.bmd-lighting.com](http://www.bmd-lighting.com)**BMT Group**Riga, Latvia, [www.bmt.lv](http://www.bmt.lv)**Boca Flasher**Boca Raton, FL, USA, [www.bocaflasher.com](http://www.bocaflasher.com)**Brewer Science Inc**Rolla, MO, USA, [www.brewerscience.com](http://www.brewerscience.com)**Brightcast Co Ltd**Beijing, China, [www.brightcast-led.com](http://www.brightcast-led.com)**Bright Green Technology**Richmond, Surrey, UK,  
[www.brightgreentechnology.com](http://www.brightgreentechnology.com)**Bright View Electronics Co Ltd**Taipei, Taiwan, [www.bvled.com.tw](http://www.bvled.com.tw)**Bright View Technologies**Morrisville, NC, USA,  
[www.brightviewtechnologies.com](http://www.brightviewtechnologies.com)**Brilliantz Electronic Systems Ltd**14 Tewin Ct, Welwyn Garden City AL7 1AU,  
UK, [sales@brilliantz.co.uk](mailto:sales@brilliantz.co.uk), [www.brilliantz.co.uk](http://www.brilliantz.co.uk)

Develops and supplies novel light engines which exploit innovative AC LED technology, the latest developments in high power light emitting diodes and advanced control electronics to support bright, low cost, efficient and maintenance free display, signage and specialist lighting applications.

**Brite Energy Solutions**

Curtis, NE, USA, 1 308 367 4542

**Brite-LED Optoelectronics Inc**Plant City, FL, USA, [www.brite-led.com](http://www.brite-led.com)**Brtech Lighting (Dongguan) Co Ltd**Dongguan, Guangdong, China,  
[www.brtechled.com](http://www.brtechled.com)**BWM Technology Co Ltd**

Shenzhen, Guangdong, China

**B&W TEK Inc**Newark, DE, USA, [www.bwtek.com](http://www.bwtek.com)**BYP Enterprise Ltd**Xiamen, Fujian, China,  
[www.byp-enterprise.com/led](http://www.byp-enterprise.com/led)**Cambridge America LLC**Branford, CT, USA, [www.cambridgepcb.com](http://www.cambridgepcb.com)**Canada LEDs**Mississauga, ON, Canada,  
[www.canadaleds.com](http://www.canadaleds.com)**CAO Group Inc**West Jordan, UT, USA, [www.caogroup.com](http://www.caogroup.com)**Capovani Brothers Inc**Scotia, NY, USA, [www.capovani.com](http://www.capovani.com)**Carclo Technical Plastics Ltd**103 Buckingham Ave, Slough SL1 4PF UK,  
TEL: 44 01753 575011,  
FAX: 44 01753 811359,  
[sales@carclo-optics.com](mailto:sales@carclo-optics.com),  
[www.carclo-optics.com](http://www.carclo-optics.com)

## ■ See ad on page 30

Designs, molds and markets optical and plastic components for a variety of industries encompassing LED optics, bespoke modular systems, automotive, medical, and telecommunications. Has been at the leading edge of optical technology since its foundation in 1936. Such development has placed the company at the forefront of its class. Today the company boasts unrivalled expertise in optical design and manufacture. It has its own optical design department with full CAD and test-lab facility.

**Carley Lamps**Torrance, CA, USA, [www.carleylamps.com](http://www.carleylamps.com)**Carmanah Signs**Calgary, AB, Canada, [www.carmanahsigns.com](http://www.carmanahsigns.com)**Carmanah Technologies Corp**Victoria, BC, Canada, [www.carmanah.com](http://www.carmanah.com)**Carson Technology Co Ltd**New Taipei City, Taiwan, [www.carsonlite.com](http://www.carsonlite.com)**CA Supply Co**Pacoima, CA, USA, [www.ledbestdeal.com](http://www.ledbestdeal.com)**Catalyst LED's**Coeur d Alene, ID, USA, [www.catalystleds.com](http://www.catalystleds.com)**C Crane Co Inc**Fortuna, CA, USA, [www.geobulb.com](http://www.geobulb.com)**CCS International Circuits LLC**Dunedin, FL, USA, [www.ccsintlcircuits.com](http://www.ccsintlcircuits.com)**CD2 BV**Rotterdam, Zuid-holland, The Netherlands,  
[www.cd2bv.nl](http://www.cd2bv.nl)**Celsia Technologies**Miami, FL, USA, [www.celsiatechnologies.com](http://www.celsiatechnologies.com)**Cepoint Networks LLC**Nashua, NH, USA, [www.cepoint.com](http://www.cepoint.com)**Ceres Technology Advisors Inc**Needham, MA, USA, [www.cerescom.net](http://www.cerescom.net)**CerFlex International**Helmond, The Netherlands, [www.cerflex.com](http://www.cerflex.com)**Cerno**Laguna Beach, CA, USA, [www.cernogroup.com](http://www.cernogroup.com)**CEZOS**81-534 Gdynia, ul Olgierda 88 b Poland,  
TEL: 48 58 664 88 61, [www.cezos.com](http://www.cezos.com)

Includes a highly qualified team of electronic engineers and designers and offers full scope designing for new LED technologies in different applications.

**Challenge Electronics Ltd**Stevenage, Herts, UK,  
[www.challengeelectronics.co.uk](http://www.challengeelectronics.co.uk)**Chang Sha Yi Jia Electronics Co Ltd**Chang Sha, China, [www.csyjdz.cn](http://www.csyjdz.cn)**Chen Ming Industrial Co Ltd**Linan, Zhejiang, China, [www.cmlamp.com](http://www.cmlamp.com)**ChiHua Lighting Technology Co Ltd**Dongguan, China, [www.chihualight.com](http://www.chihualight.com)**ChinaSunshiny GreenPower Lighting Technology Co Ltd**Beijing, China, [www.beamant.com](http://www.beamant.com)**Chloride Systems**Burgaw, NC, USA, [www.chloridesys.com](http://www.chloridesys.com)**Chooyu Chemical Co Ltd**Shanghai, China,  
[www.chooyuchem.com/index\\_en.html](http://www.chooyuchem.com/index_en.html)**Chooyu USA**Boxborough, MA, USA,  
[www.chooyuchem.com/index\\_en.html](http://www.chooyuchem.com/index_en.html)**ChromLED Corp**City of Industry, CA, USA, [www.chromeled.com](http://www.chromeled.com)**Cixi Sanhuan Magnetic Materials Factory**

Cixi, Zhejiang, China, 86 574 63743909

**Clandell Ltd**Bury St Edmunds, Suffolk, UK,  
[www.clandell.com](http://www.clandell.com)**Clean Light Green Light**Mount Clemens, MI, USA,  
[www.cleanlightgreenlight.com](http://www.cleanlightgreenlight.com)**CODE Lighting SA**Vevey, Switzerland, [www.code-lighting.ch](http://www.code-lighting.ch)**Coloronix**Los Angeles, CA, USA, [www.coloronix.com](http://www.coloronix.com)

## company directory | COLOR STARS INC

## ColorStars

**Color Stars Inc**

10F, No 566 Jung Jeng Rd, Sindian District, New Taipei City, Taiwan 23148 Taiwan, TEL: 886 2 8667 6600, FAX: 886 2 8667 1400, sales@colorstars.com, www.colorstars.com

## ■ See ad on page 83

Founded in 2002, is a vertically integrated company that incorporates downstream applications with upstream LED packaging. Its LED lighting application development activity ranges from lighting fixture design to optical lens and heat management, from multiple-chip RGB packaging and white and warm-white LED packaging to special packaging methods designed for general lighting applications. The company, a part of ColorStars Group, headquartered in Irvine, CA, conducts R&D and manufacturing in Taipei and Kaohsiung, Taiwan.

**Comdel Inc**

Gloucester, MA, USA, [www.comdel.com](http://www.comdel.com)

**www.CommercialEcoLights.com**

San Diego, CA, USA, [www.commercialecolights.com](http://www.commercialecolights.com)

**Connexion**

Buffalo Grove, IL, USA, [www.connexiones.com](http://www.connexiones.com)

**Continental Inc**

Anderson, IN, USA, [www.continentalinc.com](http://www.continentalinc.com)

**Control Development Inc**

South Bend, IN, USA, [www.controldevelopment.com](http://www.controldevelopment.com)

**CooLED Ltd**

Zhuhai, Guangdong, China, [www.cooled-lighting.com](http://www.cooled-lighting.com)

**Cooliance Inc**

Warwick, RI, USA, [www.cooliance.com](http://www.cooliance.com)

**Cool Polymers Inc**

North Kingstown, RI, USA, [www.coolpolymers.com](http://www.coolpolymers.com)

**Coolux Electro-optics Co Ltd**

Kowloon, Hong Kong, [www.coolux.com.hk](http://www.coolux.com.hk)

**Cool-View**

Ft Myers, FL, USA, [www.cool-view.com](http://www.cool-view.com)

**Cooper Controls**

Peachtree City, GA, USA, [www.coopercontrol.com](http://www.coopercontrol.com)

**Coyote Marketing LLC**

Houston, TX, USA, 1 713 875 1438

**CraLux Lighting**

Salt Lake City, UT, USA, [www.craluxlighting.com](http://www.craluxlighting.com)

**Creative Technology HK Ltd**

Kowloon, Hong Kong, [www.mabushilighting.com](http://www.mabushilighting.com)

**Creative Technology US**

Panorama City, CA, USA, [www.ctus.com](http://www.ctus.com)

**Cree Inc**

4600 Silicon Dr, Durham, NC 27703 USA, TEL: 1 919 313 5300, FAX: 1 919 313 5558, xlampsales@cree.com, www.cree.com

## ■ See ad on back cover

Provides innovation, performance and application optimization, enabling simplified design and a low system cost. With a wide portfolio, Cree XLamp LEDs, high-brightness LEDs and LED modules provide the LED solution needed with the performance each application requires.

**Crescent Plastics Inc**

Evansville, IN, USA, [www.crescentplastics.com](http://www.crescentplastics.com)

**CRS Electronics Inc**

Welland, ON, Canada, [www.crselectronics.com](http://www.crselectronics.com)

**CSA International**

Independence, OH, USA, [www.csa-international.com](http://www.csa-international.com)

**CS Bright Corp**

New Taipei County, Taiwan, [www.csbright.com](http://www.csbright.com)

**CT Creative Technology**

Nürtingen, Germany, [www.ctgermany.com](http://www.ctgermany.com)

**cTech Ltd**

Cron dall, Hampshire, UK, [www.ctech.co.uk](http://www.ctech.co.uk)

**CUI Inc**

Tualatin, OR, USA, [www.cui.com](http://www.cui.com)

**CyberBiota Inc**

Raleigh, NC, USA, [www.cyberbiota.com](http://www.cyberbiota.com)

**CYRON Lighting**

Chatsworth, CA, USA, [www.cyron.com](http://www.cyron.com)

**Dai Shin Technologies Inc**

Waukesha, WI, USA, [www.daishintech.com](http://www.daishintech.com)

**Dalian Luminglight Co Ltd**

Dalian, Liao Ning, China, [www.cnluming.com](http://www.cnluming.com)

**Danson Electronics Ltd**

Jiangmen City, Guangdong, China, [www.dansonelectronics.com](http://www.dansonelectronics.com)

**DBM Reflex Lighting Solutions**

Laval, QC, Canada, [www.dbmlighting.com](http://www.dbmlighting.com)

**Del International**

Ankara, Turkey, [www.del.com.tr](http://www.del.com.tr)

**Dellux International Inc**

Bois-des-Filion, QC, Canada, [www.dellux.ca](http://www.dellux.ca)

**Delneo sprl**

Melen, Belgium, [www.delneo.com](http://www.delneo.com)

**Delray Lighting Inc**

Burbank, CA, USA, [www.delraylighting.com](http://www.delraylighting.com)

**Delta Light**

Minneapolis, MN, USA, 1 763 354 6581

**Denggang Lighting Technology Co Ltd**

Foshan, Guangdong, China, [www.denggangled.com](http://www.denggangled.com)

**Denka Chemicals GmbH**

Düsseldorf, Germany, [www.denka.co.jp](http://www.denka.co.jp)

**Design LED Products**

Livingston, West Lothian, UK, [www.designledproducts.com](http://www.designledproducts.com)

**DesignLED Technology Co Ltd**

Shenzhen, Guangdong, China, [www.designledpro.com](http://www.designledpro.com)

**Designplan Lighting Inc**

Frenchtown, NJ, USA, [www.designplan.com](http://www.designplan.com)

**Dew & Ken Optoelectronics (Zhengzhou) Co Ltd**

Zhengzhou, Henan, China, [www.xinshiyeled.com](http://www.xinshiyeled.com)

**DG Lighting Technology Co Ltd**

Foshan City, Guangdong, China, [www.denggangled.com](http://www.denggangled.com)

**Dialight Corp**

Farmingdale, NJ, USA, [www.dialight.com](http://www.dialight.com)

**Diamond LED Lighting**

Sandbach, Cheshire, UK, [www.diamondledlighting.co.uk](http://www.diamondledlighting.co.uk)

**Diana Electronic-Systeme GmbH**

Schwaikheim, Germany, [www.ledscale.com](http://www.ledscale.com)

**Dicrom Electronica SL**

Barcelona, Spain, [www.dicrom.com](http://www.dicrom.com)

**Digi-Key Corp**

Thief River Falls, MN, USA, [www.digkey.com](http://www.digkey.com)

**DigiLighting Inc**

Guangzhou, China, [www.digi-lighting.com](http://www.digi-lighting.com)

**Digitalicht AG**

Freigericht, Hessen, Germany, [www.digitalicht.de](http://www.digitalicht.de)

**Digital Light Lab**

Knoxville, TN, USA, [www.digitallightlab.com](http://www.digitallightlab.com)

**Digital Lumens**

Boston, MA, USA, [www.digitallumens.com](http://www.digitallumens.com)

**Digital Projection Inc**

Kennesaw, GA, USA, [www.digitalprojection.com](http://www.digitalprojection.com)

**DigitalSignageSupplies.com**

Bristol, RI, USA, [www.digitalsignagesupplies.com](http://www.digitalsignagesupplies.com)

**Diodes Inc**

Dallas, TX, USA, [www.diodes.com](http://www.diodes.com)



## company directory | ELDOLED AMERICA INC

**Diogen Lighting**Centennial, CO, USA, [www.diogenlighting.com](http://www.diogenlighting.com)**Dipet-M Co Ltd**

Incheon-si, Korea, 82 70 4190 2157

**Direct Trade Supplies**Torpoint, Cornwall, UK,  
[www.directtradesupplies.co.uk](http://www.directtradesupplies.co.uk)**Discovery Technology International**Sarasota, FL, USA, [www.discovtech.com](http://www.discovtech.com)**D-LED Illumination Technologies**Hod Hasharon, Israel, [www.d-led.net](http://www.d-led.net)**DMK USA Inc**Stevens Point, WI, USA, [www.dmkinco.com](http://www.dmkinco.com)**DMS Lighting LLC**Laguna Niguel, CA, USA, [www.dmslighting.com](http://www.dmslighting.com)**DMX LED Lights**Las Vegas, NV, USA, [www.dmxledlights.com](http://www.dmxledlights.com)**Docter Optics GmbH**Neustadt a d Orla, Germany,  
[www.docteroptics.com](http://www.docteroptics.com)**Dolan-Jenner Industries**Boxborough, MA, USA, [www.dolan-jenner.com](http://www.dolan-jenner.com)**Dominant Opto Technologies**Melaka, Malaysia, [www.dominant-semi.com](http://www.dominant-semi.com)**Domino LED**San Isidro, Provincia de Buenos Aires,  
Argentina, [www.dominioled.com](http://www.dominioled.com)**DongFang Bros Electronic Co Ltd**Shenzhen, China, [www.dongfangled.com](http://www.dongfangled.com)**Dongguan Jingliang Lighting Factory**Dongguan, Guangdong, China,  
[www.jinglianglight.com](http://www.jinglianglight.com)**Dora Texas Corp**Houston, TX, USA, [www.dorataxas.com](http://www.dorataxas.com)**Dow Corning Corp**Midland, MI, USA,  
[www.dowcorning.com/lighting](http://www.dowcorning.com/lighting)**Downey+Rippe**Batesville, IN, USA, [www.new-leds.com](http://www.new-leds.com)**DST**Holon, Israel, [www.dst-cleantech.com](http://www.dst-cleantech.com)**DuraComm Lighting**North Kansas City, MO, USA,  
[www.duracommlighting.com](http://www.duracommlighting.com)**Duromec Technologies Inc**Magog, QC, Canada, [www.duroled.com](http://www.duroled.com)**Dymax Corp**Torrington, CT, USA, [www.dymax.com](http://www.dymax.com)**Dynamic LED**Beijing, China, [www.dynamic-led.com](http://www.dynamic-led.com)**Dynamic LED Ltd**Bridge of Allan, Stirling, UK,  
[www.dynamiclead.com](http://www.dynamiclead.com)**Dynamic Systems Inc**Redmond, WA, USA,  
[www.a-barcode.com/software](http://www.a-barcode.com/software)**Earth Energy Solutions Group**Ponce Inlet, FL, USA, [www.eesgroup.us](http://www.eesgroup.us)**EarthlightLED.com**Rancho Santa Margarita, CA, USA,  
[www.earthlightled.com](http://www.earthlightled.com)**Earthmate**Alsip, IL, USA, [www.earthmatelighting.com](http://www.earthmatelighting.com)**EBV Elektronik**

Im Technologiepark 2-8, Poing 85586

Germany, TEL: 49 8121 774 0,

FAX: 49 8121 774 422,

generallighting@ebv.com, [www.ebv.com](http://www.ebv.com)

## ■ See ad on page 101

Specializes in European semiconductor distribution. Specialists provide a strong focus on a selected group of long-term manufacturing partners. Over one hundred continuously-trained application specialists offer extensive application know-how and design expertise. Warehouse operations, complete logistics solutions and value-added services such as programming, taping and reeling and laser marking are fulfilled by Avnet Logistics, EBV's logistical backbone and Europe's largest service centre. An Avnet (NYSE:AVT) company, founded in 1969.

**Eclipse Lighting Inc**Schiller Park, IL, USA,  
[www.eclipselightinginc.com](http://www.eclipselightinginc.com)**Ecomaa Lighting Inc**

3F-1, No 31, Sintai Rd, Jhubei City, Hsinchu

302 Taiwan, TEL: 886 3 552 9383,

FAX: 886 3 552 7148, sales@ecomaa.com,

[www.ecomaa.com](http://www.ecomaa.com)

The patented Cooling Fan is inserted in LED lightings lamps. Complies with product standards such as UL, TUV, FCC, RoHS, and CE. Product series include bulbs, PAR 20/30/38, MR16, AR111, T8 tube, ceiling lights, and stripe lights. The high-efficiency 80W LED bay light is the new product and is perfect for warehouse and high elevated space. Dimmable lightings are available. E40/E39 base/weight 1.14kg

**Eco Marketing**Larkollen, Norway, [www.led-eu.com](http://www.led-eu.com)**e-conolight**Sturtevant, WI, USA, [www.e-conolight.com](http://www.e-conolight.com)**e-con Systems India Pvt Ltd**Chennai, Tamilnadu, India,  
[www.e-consystems.com](http://www.e-consystems.com)**Ecopac Power**Long Crendon, Buckinghamshire, UK,  
[www.ecopacpower.com](http://www.ecopacpower.com)**Ecopower Inc**London, ON, Canada, [www.ecopower.net](http://www.ecopower.net)**EcoTek Lighting**Lake Forest, CA, USA, [www.ecoteklighting.com](http://www.ecoteklighting.com)**Eden Park Illumination**Champaign, IL, USA, [www.edenpark.com](http://www.edenpark.com)**Edge Electronics Inc**Bohemia, NY, USA, [www.edgeelectronics.com](http://www.edgeelectronics.com)**Edge Lighting**Chicago, IL, USA, [www.edgelighting.com](http://www.edgelighting.com)**Edgelit Acrylics LLC**Annapolis, MD, USA, [www.edgelitacrylic.com](http://www.edgelitacrylic.com)**Edison Opto Corp**

4F, No 800, Chung-Cheng Rd,

Chung-Ho, New Taipei City 23586

Taiwan, TEL: 886 2 82276996,

FAX: 886 2 82276993,

service@edison-opto.com.tw,

[www.edison-opto.com](http://www.edison-opto.com)

## ■ See ad on page 21

Manufactures, designs and produces high-power LEDs, solid-state lighting application modules, and LED sensors and SPDIFs. The company has created a unique LDMS (lighting design manufacturing service) service plan to solve four the most important issues: thermal management, electrical driving conditions, mechanical refinement and optical optimization (TEMO) in LEDs lighting design. The company responds to customers' needs and is capable of providing tailored services to each lighting project.

**Edlux Luminaire**Shanghai, China, [www.edlux.cn](http://www.edlux.cn)**EE Green Lighting**Eau Claire, WI, USA, [www.eegreenlighting.com](http://www.eegreenlighting.com)**EfficientNow**San Mateo, CA, USA, [www.efficientnow.com](http://www.efficientnow.com)**EFFLED**Jiangmen, Guangdong, China, [www.effled.com](http://www.effled.com)**Ekta**Kiev, Ukraine, [www.ekta-led.com](http://www.ekta-led.com)**Eldim SA**Herouville Saint-Clair, France, [www.eldim.fr](http://www.eldim.fr)**eldoLED America Inc**San Jose, CA, USA, [www.eldoled.com](http://www.eldoled.com)

## eldoLED

your product | our drive

## eldoLED BV

Luchthavenweg 18a, Eindhoven 5657 EB  
The Netherlands, TEL: 31 40 2054050,  
FAX: 31 40 2054058, info@eldoled.com,  
www.eldoled.com

Develops, produces and markets high-performance drive, networking and control solutions for general white lighting and full color RGB-W/A LED lighting applications. The product portfolio includes LedSync/DMX/DALI/0-10V compatible LED drivers, network bridges and DMX dimmers. Also supports its customers with customized solutions and design-in developments.

## TheElectricWeb.com

Fresh Meadows, NY, USA,  
www.theelectricweb.com

## Electrobrain Enterprises

Manila, Philippines, www.ebrain.com.ph

## Electro-Matic Visual Products

Farmington Hills, MI, USA,  
www.empvisualsolutions.com

## Electronic Careers.com

Malibu, CA, USA, www.electroniccareers.com

## element 14

Singapore, http://sg.element14.com

## E-Lite OptoTech Co Ltd

Shenzhen, China, www.elite-opto.com

## Elkays Electronics

San Diego, CA, USA, www.elkays.com

## Ellsworth Adhesives

Germantown, WI, USA, www.ellsworth.com

## ELMA Electronic Inc

Fremont, CA, USA, www.elma.com

## Elmet Technologies

Lewiston, ME, USA,  
www.elmettechnologies.com

## Elumina Technology Inc

Taipei, Taiwan, www.eluminatech.com

## EMD Chemicals Inc

Gibbstown, NJ, USA, www.emdchemicals.com/  
lcd-emerging-technologies

## Emergence Technology Consultants LLC

Mount Airy, MD, USA,  
www.emergencetechnologyconsultants.com

## Endicott Research Group (ERG) Inc

Endicott, NY, USA, www.ergpower.com

## Eneltec Group

Shanghai, China, www.eneltec-led.com

## Energy Efficient Products Inc

Rome, NY, USA, www.eepsales.com

## Energyled Corp

Sindian City, Taipei County, Taiwan,  
www.energyled.com

## EnergyMatrix

Santa Clara, CA, USA, www.energymatrix.biz

## Energy Tech Solutions LLC

Madison, WI, USA,  
www.ledenergysolutions.com

## Enerlighting USA

Clovis, CA, USA, www.enerlightingusa.com

## Enertrail Technology Co Ltd

Sijhieh City, Taipei County, Taiwan,  
www.enertrail.com.tw

## enLux Lighting

Tempe, AZ, USA, www.enluxled.com

## Enn Cee Enterprises

Bangalore, Karnataka, India,  
www.enncesolar.com

## Environmental LED

Vicksburg, MI, USA, www.environmentalled.com

## EnvironmentalLights.com

San Diego, CA, USA,  
www.environmentallights.com

## EO Lighting

Dural, NSW, Australia, www.eolighting.com.au

## EPIGAP Optronic GmbH

Berlin, Germany, www.epigap-optronic.com

## epiLED

Wroclaw, Poland, www.epiled.com

## Epi-Light Ltd

Cork City, Ireland, www.epi-light.com

## Epistar Corp

Hsinchu, Taiwan, www.epistar.com.tw

## Epoxy Technology Inc

Billerica, MA, USA, www.epotek.com



## EPtronics Inc

5230 Pacific Concourse Dr, Suite 370,  
Los Angeles, CA 90045 USA,  
TEL: 1 800 643 0688, info@eptronics.com,  
www.eptronics.com

## ■ See ad on page 56

Offers constant current and constant voltage LED drivers in the most popular packages and wattages. Conforms to UL, cUL, FCC, CE and other regulatory agencies. High efficiency with PFC control. Input voltages from 90 to 305VAC.

## ERG Lighting

Endicott, NY, USA, www.erglighting.com

## ESPprosearch

Miami, FL, USA, www.espprosearch.com

## Estar LED Light Co Ltd

Gardena, CA, USA,  
www.wix.com/oemled/oemled

## ETEC Lighting Co Ltd

Shenzhen, Guangdong, China,  
www.ledlights-china.com

## Eternaleds Inc

Alhambra, CA, USA, www.eternaleds.com

## e3 (Ethos Ethical Energy)

London, UK, www.e3ethicalenergy.co.uk

## Etrilum

Shanghai, China, www.etrilum.com

## EuLED Ltd

Finmere, Buckinghamshire, UK, www.euled.org

## Eulitha AG

Villigen PSI, Switzerland, eulitha.com

## Evatec Ltd

Flums, Switzerland, www.evatecnet.com

## Everbright Lights Inc

Richmond Hill, ON, Canada,  
www.everbrightlights.com

## Everbrite LLC

Greenfield, WI, USA, www.everbrite.com

## EVERLIGHT

## Everlight Electronics Co Ltd

No 6-8, Zhonghua Rd, Shulin Dist,  
New Taipei City 23860 Taiwan,  
TEL: 886 2 2685 6688,  
FAX: 886 2 2685 6699,  
marketing@everlight.com, www.everlight.com

## ■ See ad on page 11

Speed, flexibility and global reach are the key factors for success. The global network of research and development facilities, production sites and sales offices sets the pace in development, production and marketing of first-class lighting and advanced opto-electronic applications. As a reliable partner and certified supplier of some of the world's leading companies, the comprehensive LED product portfolio sets international standards.

## Evluma

Seattle, WA, USA, www.evluma.com

## E Wave Corp

London, UK, www.ewave-corp.com

## EXALOS

Schlieren, Switzerland, www.exalos.com

## Excelitas Technologies Corp

Wheeling, IL, USA, www.excelitas.com

## Excellence Opto Inc

Pomona, CA, USA, www.eoius.com



**Excelsys Technologies Ltd**  
27 Eastgate Business Park, Little Island,  
Cork, Ireland, TEL: 353 2143 54716,  
FAX: 353 21 4354864,  
dermotflynn@excelsys.com,  
www.excelsys.com

Designs and manufactures high-efficiency, high-reliability constant current, dimming and constant voltage LED drivers for outdoor and indoor applications including street lighting, signage, digital displays, high bay lighting, and refrigerator lighting. With efficiencies of over 90%, the extensive range of waterproof (IP67 rated) LED drivers provide 25 to 300W with input voltage ranges of 90–277VAC and 347/480VAC. All LED drivers are UL8750 approved and CE marked.

**Exclara**

Santa Clara, CA, USA, [www.exclara.com](http://www.exclara.com)

**Eyeleds Canada**

Calgary, AB, Canada, [www.eyeleds.ca](http://www.eyeleds.ca)

**Eyeleds International**

Goes, The Netherlands, [www.eyeleds.com](http://www.eyeleds.com)

**EYE Lighting International**

Mentor, OH, USA, [www.eyelighting.com](http://www.eyelighting.com)

**Fa GK Technik**

Augsburg, Germany, [www.greenledlight.de](http://www.greenledlight.de)

**Fairfield Crystal Technology**

New Milford, CT, USA, [www.fairfieldcrystal.com](http://www.fairfieldcrystal.com)



**Farnell**

Canal Rd, Leeds LS12 2TU, UK,  
TEL: 44 8447 11 11 11,  
FAX: 44 8447 11 11 12, sales@farnell.com,  
www.farnell.com/lighting

Distributes electronic and electrical components, and supports lighting designers across the world. Offers a broad range of LED lighting solutions including high-power LEDs, LED modules, LED power supplies and drivers as well as thermal management, optical and interconnect solutions.

**Farralane Pro Lighting Audio & Video Systems**

Farmingdale, NY, USA, [www.farralane.com](http://www.farralane.com)

**Fawoo Technology Co Ltd**

Bucheon, Gyeonggi-do, Korea, [www.fawoo.com](http://www.fawoo.com)

**Fernplas**

Alton, UK, [www.fernplas.com](http://www.fernplas.com)

**Fiberdyne Energy/Edison LED**

Frankfort, NY, USA, [www.edisonled.com](http://www.edisonled.com)

**Fiberguide Industries Inc**

Stirling, NJ, USA, [www.fiberguide.com](http://www.fiberguide.com)

**FiberSavvy.com**

Wildomar, CA, USA, [www.fibersavvy.com](http://www.fibersavvy.com)

**Fine Technix Co Ltd**

Anyang-si, Gyeonggi-do, Korea,  
[www.finetechnix.com](http://www.finetechnix.com)

**Firefly LED Lighting Inc**

Austin, TX, USA, [www.fireflyledlight.com](http://www.fireflyledlight.com)

**Firefly Technology Corp**

Kennesaw, GA, USA,  
[www.fireflytechnology.com](http://www.fireflytechnology.com)

**First Level Inc**

York, PA, USA, [www.firstlevelinc.com](http://www.firstlevelinc.com)

**Flexfire LEDs**

Mountain House, CA, USA,  
[www.flexfireleds.com](http://www.flexfireleds.com)

**Fobsun Electronics Ltd**

Shenzhen City, China, [www.fobsun.com](http://www.fobsun.com)

**Focus LLC**

Fryazino, Moscow Region, Russian Federation,  
[www.ledsvet.ru](http://www.ledsvet.ru)

**ForeverGreen Illumination (FGI)**

Spokane, WA, USA, [www.fgillumination.com](http://www.fgillumination.com)

**Fortis Technology Co Ltd**

New Taipei City, Taiwan, [www.fortistech.com.tw](http://www.fortistech.com.tw)

**The Fox Group Inc**

Warrenton, VA, USA, [www.thefoxgroupinc.com](http://www.thefoxgroupinc.com)

**Foxsemicon Integrated Technology Inc**

Chu-Nan, Miaoli County, Taiwan,  
[www.foxsemicon.com](http://www.foxsemicon.com)



**FrontAnD Technology**

No 9, Neixi Rd, Luzhu Township,  
Taoyuan, Taoyuan County 33852 Taiwan,  
TEL: 886 3 3240501, FAX: 883 3 3249496,  
info@frontand.com.tw, [www.frontand.com.tw](http://www.frontand.com.tw)

■ See ad on page 91

Has engaged in LED and IC design for 12 years. Provides standard and niche products and every design incorporates patented LED, circuit, optical and thermal solutions. All products are manufactured in Taiwan and are CE, FCC certified and UL compliant. In 2012, the company developed more products, better performance, and better quality.

**Frostdale Co Ltd**

Seoul, Korea, [www.frostdale.com](http://www.frostdale.com)

**FSP Group USA**

Chino Hills, CA, USA, [www.fspgroupusa.com](http://www.fspgroupusa.com)

**Fulsun Led Display**

Shenzhen, Guangdong, China, [www.jxaled.com](http://www.jxaled.com)



**Fusion Optix**

19 Wheeling Ave, Woburn, MA 01801 USA,  
TEL: 1 781 995 0805, FAX: 1 781 995 0803,  
info@fusionoptix.com, [www.fusionoptix.com](http://www.fusionoptix.com)

■ See ad on page 32

Enables the next generation of high performance display and lighting products.

**Future Energy Solutions**

Hollywood, FL, USA,  
[www.futureenergysolutions.us](http://www.futureenergysolutions.us)

**FUTURELED GmbH**

Berlin, Germany, [www.futureled.de](http://www.futureled.de)

**Future Light**

Thornton, South Africa, [www.futurelight.co.za](http://www.futurelight.co.za)



**Future Lighting Solutions**

237 Hymus Blvd, Pointe-Claire, QC  
H9R 5C7, Canada, TEL: 1 888 589 3662,  
americas@futurelightingsolutions.com,  
[www.futurelightingsolutions.com](http://www.futurelightingsolutions.com)

■ See ad on page 62

Provides LED lighting components and support services for solid-state lighting products and installations, including engineering expertise, concept development, full system solutions and online tools that accelerate quality application development. The company is a division of Future Electronics.

**Fuzhou Morstar Electric Technology Co Ltd**

Fuzhou, Fujian, China, [www.morstar.com](http://www.morstar.com)

**FZtech**

Taipei, Taiwan, [www.fztech.com.tw](http://www.fztech.com.tw)

**Gaggione SAS**

Montréal la Cluse, France, [www.gaggione.com](http://www.gaggione.com)



**Gamma Scientific Inc**

8581 Aero Dr, San Diego, CA 92123 USA,  
TEL: 1 858 279 8034, FAX: 1 858 576 9286,  
info@gamma-sci.com, [www.gamma-sci.com](http://www.gamma-sci.com)

Helps leading manufacturers, universities and government institutions achieve precision light measurements. LED testing solutions include laboratory-grade, turnkey LED test systems, high-speed LED sorters, spectroradiometers, integrating spheres, photometers and colorimeters. Also operates a NVLAP accredited laboratory for LM-79 testing (NVLAP Lab Code 200823-0).

## company directory | GAUTAM POLYMERS

**Gautam Polymers**New Delhi, India, [www.gautampolymers.com](http://www.gautampolymers.com)**Gemma Lighting Ltd**Portsmouth, Hampshire, UK,  
[www.gemmalighting.com](http://www.gemmalighting.com)**Genesis LED Solutions**Plano, TX, USA, [www.genesisledsolutions.com](http://www.genesisledsolutions.com)**Geospec Enterprises**Gurgaon, Haryana, India, [www.geospec.in](http://www.geospec.in)**Gigahertz-Optik Inc**Newburyport, MA, USA,  
[www.gigahertz-optik.com](http://www.gigahertz-optik.com)**GlacialLight**Jung He City, Taipei County, Taiwan,  
[www.GlacialLight.com](http://www.GlacialLight.com)**Global Lighting Technologies**525 Andrews Cir, Brecksville, OH  
44141 USA, TEL: 1 440 922 4584,  
FAX: 1 440 922 4585, [info@glthome.com](mailto:info@glthome.com),  
[www.glthome.com](http://www.glthome.com)

## ■ See ad on page 71

Utilizes advanced light extraction with sophisticated optics and high-volume manufacturing for a range of applications for edge lighting technology including general illumination, LCD backlighting, dead front and touch-enabled graphic interface illumination, keyboard/keypad backlighting, and more. Edge lighting focuses the light of LEDs placed along one or more edges of an ultra-thin light guide to extract light precisely where needed, providing bright, uniform light in a thinner form factor without hot spots or dark areas.

**Global Training Solutions Inc**Mississauga, ON, Canada,  
[www.globaltrainingsolutions.ca](http://www.globaltrainingsolutions.ca)**GloPlus**Milpitas, CA, USA, [www.gloplus.com/index.html](http://www.gloplus.com/index.html)**Goldeneye Inc**Carlsbad, CA, USA, [www.goldeneyeled.com](http://www.goldeneyeled.com)**Golden Polymer Extrusion Technology Co Ltd**Panyu, Guangzhou, Guangdong, China,  
[www.goldenpoly.com/en/index/index.jsp](http://www.goldenpoly.com/en/index/index.jsp)**Golden Sources (HK) Ltd**Hangzhou City, China,  
[www.golden-sources.com](http://www.golden-sources.com)**GooSum Greenery Tech Co Ltd**Taipei, Taiwan, [www.gosum.com](http://www.gosum.com)**GP Lighting Technology**HuiZhou, China, [www.gplighting.com.cn](http://www.gplighting.com.cn)**GrafTech International Ltd**Parma, OH, USA, [www.egraf.com](http://www.egraf.com)**Graham Associates Inc**Rockledge, FL, USA, [www.grahamrep.com](http://www.grahamrep.com)**Grand LED**Shenzhen, Guangdong, China,  
[www.grand-led.com](http://www.grand-led.com)**GRE Alpha Electronics Ltd**Unit 218, 2/F, No 1 Science Pk W Ave,  
Hong Kong Science Park, Shatin, Hong Kong,  
TEL: 852 2423 3332, FAX: 852 2423 3626,  
[sales@grealpha.com](mailto:sales@grealpha.com), [www.grealpha.com](http://www.grealpha.com)

## ■ See ad on page 18

Provides advanced LED power supplies that drive solid-state lighting systems for indoor and outdoor applications. With over two decades of power conversion expertise and a commitment towards innovation, the company translates knowledge into customer-value through delivering cutting-edge technology, superior quality and significant cost-savings. The power solutions are used across the globe and target a wide range of markets, from commercial use for architectural and signage, to household use.

**Green Concepts LED LLC**Marion, MA, USA,  
[www.cleantlightgreenlight.com](http://www.cleantlightgreenlight.com)**Green Creative LLC**San Francisco, CA, USA, [www.gc-lighting.com](http://www.gc-lighting.com)**Green 4 All Energy Solutions**Genoa City, WI, USA, [www.g4all.net](http://www.g4all.net)**The Green Light Co UK**Forest Row, East Sussex, UK,  
[www.thegreenlightcompany.nl](http://www.thegreenlightcompany.nl)**Green Lighting LED**Erie, PA, USA, [www.greenlightingled.com](http://www.greenlightingled.com)**Greenlight Optics LLC**Cincinnati, OH, USA, [www.greenlightoptics.com](http://www.greenlightoptics.com)**Green Machine Light Engine**Santa Clara, CA, USA,  
[www.greenmachinelightengine.com](http://www.greenmachinelightengine.com)**Green Mark Inc**Taipei County, Taiwan, [www.green-mark.com](http://www.green-mark.com)**Green Performance Lighting**North Haven, CT, USA,  
[www.greenperformancelighting.com](http://www.greenperformancelighting.com)**Green Supply**Fremont, CA, USA, [www.agreensupply.com](http://www.agreensupply.com)**GridPlex Networks**Upper Darby, PA, USA,  
[www.gridplexnetworks.com](http://www.gridplexnetworks.com)**GSSI Group Inc**Cumming, GA, USA, [www.led-greenlighting.com](http://www.led-greenlighting.com)**Gstar Technology Co Ltd**Shenzhen, China, [www.gstar-tech.net](http://www.gstar-tech.net)**GT Advanced Technologies**Merrimack, NH, USA, [www.gtat.com](http://www.gtat.com)**Guang Li-Light Power Technology**Hualien, Taiwan, [www.guangli-lightpower.com](http://www.guangli-lightpower.com)**Gulf Coast LED Inc**Lutz, FL, USA, [www.gulfcoastled.com](http://www.gulfcoastled.com)**Haeusermann GmbH**Gars am Kamp, Austria, [www.haeusermann.at](http://www.haeusermann.at)**Hai Chang Industrial Co Ltd**Shenzhen, Guangdong, China,  
[www.haichanglight.com](http://www.haichanglight.com)**Haiku Tech Inc**Miami, FL, USA, [www.haikutech.com](http://www.haikutech.com)**Halco Lighting Technologies**2940 Pacific Dr, Norcross, GA 30071 USA,  
TEL: 1 770 242 3609, FAX: 1 770 242 3615,  
[information@halcolighting.com](mailto:information@halcolighting.com),  
[www.halcolighting.com](http://www.halcolighting.com)

Manufactures lamps and ballasts designed for industrial/commercial, residential and specialty lighting applications. The award-winning ProLED product line, including PARs, MRs, JCs and A-lines, meets strict quality standards with performance verified in the NVLAP accredited energy efficient lighting testing division—Halco Lighting Laboratories. Established in 1974, the company has US distribution centers in Atlanta, Cleveland, Houston and Phoenix.

**Hamamatsu Corp**Bridgewater, NJ, USA,  
<http://sales.hamamatsu.com>**Hana Vision**Gyeonggi-dong, Korea, [www.iloveled.co.kr](http://www.iloveled.co.kr)**Hangzhou Titus Digital Technology Co Ltd**

Hangzhou, China, 86 571 85027039

**Hans von Mangoldt Reactors**Cedarburg, WI, USA, [www.mangoldt.com](http://www.mangoldt.com)**HaoLED Technology**Guangzhou, Guangdong, China,  
[www.haoled.com](http://www.haoled.com)**Hapusn**Shenzhen, China, [www.jm-top.com](http://www.jm-top.com)**HBA Tech Ltd**Richmond Hill, ON, Canada, [www.hba-tech.com](http://www.hba-tech.com)**Heatron Inc**3000 Wilson Ave, Leavenworth, KS  
66048 USA, TEL: 1 913 946 1377,  
FAX: 1 913 651 5352, [sales1@heatron.com](mailto:sales1@heatron.com),  
[www.heatron.com](http://www.heatron.com)

Partners with OEM customers to provide LED solutions that achieve the optimum balance of performance and cost.

**HEICO lighting**

St-Eustache, QC, Canada,  
[www.heicolighting.com](http://www.heicolighting.com)

**HELIO Optoelectronics Corp**

No 483, Sec 1, Beixing Rd, Zhudong Township, Hsinchu County 310 Taiwan, TEL: 886 3 596 7028, FAX: 886 3 596 9067, [sales@helipto.com](mailto:sales@helipto.com), [www.helipto.com](http://www.helipto.com)

A leading brand in high power LEDs since 2006 located in Hsinchu, Taiwan. Originated from the renowned Taiwan Industrial Technology Research Institute (ITRI), the company focuses on LED packaging technologies including silicone injection molding. Has produced billions of high performance LEDs in RGB, amber, white, and warm white for years. The products have been used in general, outdoor, show, decorative and automobile lighting, and health care and plant growth lamps.

**Helios LED Lightronics Pvt Ltd**

Chennai, Tamilnadu, India,  
[www.heliosledlightronics.com](http://www.heliosledlightronics.com)

**Helvar Oy Ab**

Karkkila, Finland, [www.helvar.com](http://www.helvar.com)

**HEP GmbH**

Schalksmuehle, Germany, [www.hepgmbh.de](http://www.hepgmbh.de)

**HEP Group USA Inc**

Rancho Palos Verdes, CA, USA,  
[www.hepgroup.net](http://www.hepgroup.net)

**Hephas Co Ltd**

Seongnam-si, Korea, [www.lcas.co.kr](http://www.lcas.co.kr)

**HEP Tech Co Ltd**

Taichung, Taiwan, [www.hepgroup.net](http://www.hepgroup.net)

**Heraeus Inc**

24 Union Hill Rd, West Conshohocken, PA 19428-2736 USA, TEL: 1 610 825 6050, FAX: 1 610 825 7061, [yin.yin@heraeus.com](mailto:yin.yin@heraeus.com), [www.thickfilm.net](http://www.thickfilm.net)

The Thick Film Division, a global player in the microelectronics industry, introduces a line of thermal management materials for the LED and power electronic packaging applications. The Thick Film Division is a worldwide supplier of thick film pastes, LTCC materials and precious metal powders to the hybrid microelectronics industry. The RoHS compliant thick film pastes are designed for meeting the expected high performance standards of thick film technology.



**Heraeus Materials Technology GmbH & Co KG**  
Heraeusstraße 12-14, Hanau 63450 Germany, TEL: 49 61 81 353400, FAX: 49 61 81 35163400, [michael.benedikt@heraeus.com](mailto:michael.benedikt@heraeus.com), [www.flexible-substrates.com](http://www.flexible-substrates.com)

■ See ad on page 41

Provides flexible substrates or stamped circuit boards (SCBs) and more to the microelectronics market. Supplies national ID cards, RFID transponders, sensors and LEDs-use substrates as chip carriers. SCBs can be found in high-power LED modules such as flashlights in mobile phones. Its great thermal conductivity (<380W/mK), combined with mass production and plenty of varieties in product design, makes it a smart solution for customers.

**HET LED HUIS**

Enschede, The Netherlands, [www.hetledhuis.nl](http://www.hetledhuis.nl)

**High Power Lighting Corp**

Tu Cheng City, Taipei Hsien, Taiwan,  
[www.hplighting.com.tw](http://www.hplighting.com.tw)

**Hi-Rel Products**

Ft Lauderdale, FL, USA, [www.hi-relsales.com](http://www.hi-relsales.com)

**Hirose Electric Co Ltd**

Tokyo, Japan, [www.hirose.com](http://www.hirose.com)

**Hisco**

Houston, TX, USA, [www.hiscoinc.com](http://www.hiscoinc.com)

**Hokuriku Malaysia Sdn Bnd**

Shah Alam, Selangor, Malaysia,  
[www.hdkhms.com.my](http://www.hdkhms.com.my)

**Holders Components**

Burgess Hill, West Sussex, England,  
[www.holderscomponents.com](http://www.holderscomponents.com)

**Holland Solutions Ltd**

Wellington, New Zealand,  
[www.hollandsolutions.co.nz](http://www.hollandsolutions.co.nz)

**Home Energy Solutions of the Triad**

Greensboro, NC, USA,  
[www.commercialenergync.com](http://www.commercialenergync.com)

**Hongkong Forous Group Co Ltd**

Zhuhai, Xiangzhou, China, [www.frpower.com](http://www.frpower.com)

**Hotbeam**

Balwyn North, Vic, Australia,  
[www.hotbeam.com](http://www.hotbeam.com)

**House Lighting Co Ltd**

Shenzhen, Guangdong, China,  
[www.led-house-lighting.com](http://www.led-house-lighting.com)

**Hybrid Integrated Circuits Ltd (HIC)**

Sofia, Bulgaria, [www.hic.bg](http://www.hic.bg)

**IEC & Associates**

Cary, NC, USA, [www.ieca-inc.com](http://www.ieca-inc.com)

**Illinois LED Products Inc**

Highland Park, IL, USA,  
[www.illinoisledproducts.com](http://www.illinoisledproducts.com)

**Illumination Optics Inc**

Wauwatosa, WI, USA,  
[www.illuminationoptics.com](http://www.illuminationoptics.com)

**Illumination Physics**

Macleod, Victoria, Australia,  
[www.illuminationphysics.com](http://www.illuminationphysics.com)

**Illumination Unlimited USA Inc**

New York, NY, USA,  
[www.illuminationunlimited.com](http://www.illuminationunlimited.com)

**Illuminex LLC**

Highlands Ranch, CO, USA, <http://illuminex.co>

**Impact Lighting Inc**

Orlando, FL, USA, [www.impactlightinginc.com](http://www.impactlightinginc.com)

**Indal WRTL**

Tipton, West Midlands, UK, [www.wrtl.co.uk](http://www.wrtl.co.uk)

**Indium Corp**

Clinton, NY, USA, 1 315 381 7554

**Industrial Computing**

Waltham, MA, USA, [www.industcomputing.com](http://www.industcomputing.com)

**Industrial Training Consultants Inc**

Pelham, AL, USA, [www.itctrng.com](http://www.itctrng.com)

**INFICON**

East Syracuse, NY, USA, [www.inficon.com](http://www.inficon.com)

**Infineon Technologies AG**

Neubiberg, Germany,  
[www.infineon.com/lighting](http://www.infineon.com/lighting)

**Ing Elmar Schrutek**

Wien, Austria, [www.schrutek.com](http://www.schrutek.com)

**Innox Pte Ltd**

Singapore, 65 96188108

**Inno Optoelectronics Ltd**

Hong Kong, [www.inno-opto.com](http://www.inno-opto.com)

**Innotec**

Zeeland, MI, USA, [www.innotecgroup.com](http://www.innotecgroup.com)

**INNOTRONIKS**

Santa Clara, CA, USA, [www.innotroniks.com](http://www.innotroniks.com)



INNOVATIONS IN OPTICS

**Innovations in Optics Inc**

82 Cummings Park, Woburn, MA 01801-2120 USA, TEL: 1 781 933 4477, FAX: 1 781 933 0007, [sarahb@innovationsinoptics.com](mailto:sarahb@innovationsinoptics.com), [www.innovationsinoptics.com](http://www.innovationsinoptics.com)

LumiBright light engines provide bright and most uniform LED light sources with competitive pricing. Constantly improving and developing standard and custom LED products for a wide range of applications including projection, display, machine vision, fiber coupling, medical lighting and life sciences. Experts at customizing LED systems to meet requirements, and uses a cutting edge optical modeling software for proof of concept prior to prototyping.

## company directory | INNOVATIVE CUSTOM LIGHTING INC

**Innovative Custom Lighting Inc**Surrey, BC, Canada, [www.innovativecl.com](http://www.innovativecl.com)**Innovative LED Lighting Inc**St James, NY, USA, [www.whitelightusa.com](http://www.whitelightusa.com)**INOV Optical Development**Tucson, AZ, USA, [www.inov.com](http://www.inov.com)**Insight Electronic Group**Lujhu Township, Taoyuan, Taiwan,  
[www.insight.com.tw](http://www.insight.com.tw)**Insight Products USA**Lawrenceville, GA, USA,  
[www.insightproductsusa.com](http://www.insightproductsusa.com)**Instrument Systems GmbH**Neumarkter Str 83, Munich 81673  
Germany, TEL: 49 89 454943 0,  
FAX: 49 89 454943 11,  
[info@instrumentsystems.com](mailto:info@instrumentsystems.com),  
[www.instrumentsystems.com](http://www.instrumentsystems.com)

## ■ See ad on page 42

Develops, manufactures and markets turnkey solutions for light measurement. These include high-performance array and scanning spectrometers as well as imaging photometers and colorimeters. Key applications are LED and display measurement, spectroradiometry and photometry. The company is one of the leading manufacturers for spectral light measurement systems. The innovative measuring systems deliver accurate and reliable results for all optical parameters of light sources in conformity with CIE recommendations.

**InteLED Corp**Huntington Beach, CA, USA, [www.inteled.com](http://www.inteled.com)**INTEMATIX****Intematix Corp**46430 Fremont Blvd, Fremont, CA  
94538 USA, TEL: 1 510 933 3300,  
FAX: 1 510 668 0793,  
[mikeko@intematix.com](mailto:mikeko@intematix.com), [www.intematix.com](http://www.intematix.com)

Develops and manufactures phosphor products that define the quality and reliability of LED solid-state lighting technologies. Offers a broad range of phosphors, facilitating full spectrum LED solutions that radiate vivid, stable and attractive light. Draws on expertise in phosphor materials to supply the ChromaLitTM remote phosphor light source collection. This breakthrough technology enables light fixture and light bulb manufacturers to exceed their goals for light quality, reliability and power efficiency.

**International Light**Peabody, MA, USA, [www.intl-lighttech.com](http://www.intl-lighttech.com)**Interplex Engineered Products**East Providence, RI, USA,  
[www.interplex.com/IEP](http://www.interplex.com/IEP)**Intertek****Intertek**3933 US Rt 11, Cortland, NY 13045 USA,  
TEL: 1 800 967 5352, [icenter@intertek.com](mailto:icenter@intertek.com),  
[www.intertek.com](http://www.intertek.com)

## ■ See ad on page 45

Is a global third-party, independent testing and certification organization for lighting products including LED/solid state lighting for many applications such as residential, commercial, automotive, traffic signal, marine, and airport lighting. Capabilities include photometry, color, environmental and mechanical testing, Energy Star testing and certification, product safety certifications, and more.

**Intertronics**Kidlington, Oxon, UK, [www.intertronics.co.uk](http://www.intertronics.co.uk)**Inventronics**Bldg B, Eastcom City, 66 Dongxin Rd,  
Binjiang District, Hangzhou, Zhejiang  
310053 China, TEL: 86 571 86632260,  
FAX: 86 571 86601139  
[sales@inventronics-co.com](mailto:sales@inventronics-co.com),  
[www.inventronics-co.com](http://www.inventronics-co.com)

## ■ See ad on page 53

A Sino-US world-class enterprise specializing in the design, manufacture, marketing and sales of high-power LED drivers. Employing proprietary cutting-edge circuit design and packaging technologies, the high-power LED drivers feature ultra high efficiency (up to 94%), high power factor (0.99), high reliability, and long life. Ideal for outdoor and industrial lighting applications including LED streetlights and tunnel lights. Products are designed to power the world with optimized performance.

**ION Light Engines**Santa Ana, CA, USA, [www.ionlightengines.com](http://www.ionlightengines.com)**IRC**Corpus Christi, TX, USA, [www.irctt.com](http://www.irctt.com)**IR-TEC International Ltd**Taoyuan, Taiwan, [www.irtec.com](http://www.irtec.com)**iSine Inc**Ronkonkoma, NY, USA, [www.isine.com](http://www.isine.com)**IST Ltd**Birmingham, West Midlands, UK, [www.istl.com](http://www.istl.com)**ITACOIL Switching and Resonant pcb Transformers**Caponago, Monza Brianza, Italy,  
[www.itacoilweb.com](http://www.itacoilweb.com)**ITC Inc**Holland, MI, USA, [www.elio-itc.com](http://www.elio-itc.com)**i-Tunnel (Indal Group)**St Asaph, UK, [www.i-tunnel.co.uk](http://www.i-tunnel.co.uk)**i-vision Lighting Solutions Ltd**Newport, UK, [www.ivisionuk.com](http://www.ivisionuk.com)**IVUS Energy Innovations**Moscow, ID, USA, [www.ivusenergy.com](http://www.ivusenergy.com)**JAP Optoelectronic Ltd**Manchester, UK, [www.japopto.com](http://www.japopto.com)**Jason Fidelity Consulting Ltd**Vancouver, BC, Canada, [www.cjmachining.com](http://www.cjmachining.com)**JD Greentech-Global Inc**Plano, TX, USA, [www.greentech-global.com](http://www.greentech-global.com)**JENOPTIK Polymer Systems GmbH**Triptis, Germany,  
[www.jenoptik.com/oes\\_lighting](http://www.jenoptik.com/oes_lighting)**JGA Associates/Bulbwizards**Grant-Valkaria, FL, USA, [www.bulbwizards.com](http://www.bulbwizards.com)**Jiangsu Tetrachem Co Ltd**Taixing, Jiangsu, China, [www.tetrachem.com.cn](http://www.tetrachem.com.cn)**Jiaozuo City Crystal Photoelectric Material**Jiaozuo, Henan, China, [www.hncrystal.com](http://www.hncrystal.com)**Jiashan Sunovo Lighting Technology Co Ltd**Zhejiang, China, [www.sunovolight.com](http://www.sunovolight.com)**JiaYao Industries Co Ltd**Chengdu, Sichuan, China, [www.jydisplay.com](http://www.jydisplay.com)**Jin Tay Industries**Taipei Hsien, Taiwan, [www.jintay.com.tw](http://www.jintay.com.tw)**Jireh Optoelectronics**Reading, PA, USA, [www.jirehled.com](http://www.jirehled.com)**Joe Simiriglio JR t/a Frontier LED Products**

Deptford, NJ, USA, 1 856 848 7300

**JP Sercel Associates Inc (JPSA)**Manchester, NH, USA, [www.jpсалaser.com](http://www.jpсалaser.com)**Juice Technology Ltd**Hoddesdon, Herts, UK,  
[www.juicetechnology.co.uk](http://www.juicetechnology.co.uk)**JW Speaker Corp**Germantown, WI, USA, [www.jwspeaker.com](http://www.jwspeaker.com)**Kaour LED Co Ltd**Guangzhou, China, [www.casor.com.cn](http://www.casor.com.cn)**Kara Jalmarit International Ltd**Lancaster, UK, [www.karajalmarit.com](http://www.karajalmarit.com)**Kaspers Lighting International BV**Oosterhout, NB, The Netherlands,  
[www.kasperslighting.com](http://www.kasperslighting.com)**Keithley Instruments Inc**Cleveland, OH, USA, [www.keithley.com](http://www.keithley.com)**KEMA**Arnhem, The Netherlands, [www.kema.com](http://www.kema.com)



**Keystone Certifications Inc**  
564 Old York Rd, Suite 5, Etters, PA  
17319 USA, TEL: 1 717 932 8500,  
FAX: 1 717 932 8501,  
jhill@keystonecerts.com,  
www.keystonecerts.com

■ See ad on page 63

EPA recognized certification body (CB) for Energy Star qualification of all categories of lighting products and components.

## KHATOD®

LENSES FOR POWER LED

**Khatod Optoelectronic**

Via Monfalcone 41, Cinisello Balsamo  
20092 Italy, TEL: 39 02 66013 695,  
FAX: 39 02 66013 500, khatod@khatod.com,  
www.khatod.com

Offers full optical service encompassing optical and mechanical designs, mold fabrication, injection molding, test and inspection, LED optics and optical modular systems as well as a long experienced capability to develop custom optical solutions for a huge variety of industries. From project to object, all in house, makes the company one of the most reliable solution-makers in lensing for high-power LEDs.

**Kingbright Corp**

City of Industry, CA, USA,  
www.kingbrightusa.com

**Kingbright Electronic Europe GmbH**

Issum, Germany, www.kingbright-europe.de

**Kingstates LED Light**

Shenzhen, Guangdong, China,  
www.kingstates.com

**KLAT-Tencor Corp**

Milpitas, CA, USA, www.kla-tencor.com



**KLUS**

2501 27th Ave, Suite F-4, Vero Beach,  
FL 32960 USA, TEL: 1 772 321 2260,  
sophia@klusdesign.com, www.klusdesign.com

Designs and manufactures products for the LED technology. The company introduced to the market LED aluminum extrusions. Innovative extrusions facilitate and popularize the use of LED strip light and make design, applications and mounting of the LED ribbon light easy. Holds patents from the United States patent and trademark office and the OHIM, Trademarks and Designs Registration Office of the European Union for LED extrusions. Founded in 1977.

**KME**

Rochester, Kent, UK, www.kme.co.uk

**Kolektor Magma doo**

Ljubljana, Slovenia, www.kolektor.com



**Konica Minolta Sensing Americas Inc**  
101 Williams Dr, Ramsey, NJ  
07446 USA, TEL: 1 201 236 4300,  
http://sensing.konicaminolta.us

Provides instruments such as portable colorimeters as well as portable and bench top spectrophotometers for color measurement, spectroradiometers and lux meters for light/display measurement. A wholly owned subsidiary of Konica Minolta Holdings USA Inc, is recognized as the international leader of industrial color, light and shape measurement. The company is responsible for product lines that continuously revolutionize how visual perception is measured by the world.

**Konica Minolta Sensing Singapore Pte Ltd**

Singapore,  
www.konicaminolta.com/instruments

**Konka LED**

Mississauga, ON, Canada,  
www.konkaamerica.com

**K-Sun Corp**

Somerset, WI, USA, www.ksun.com

**Kum-Ho Electric Co Ltd**

Hwaseong, Gyeong-gi, Korea, www.khe.co.kr

**KustomXpress.com**

Grand Junction, CO, USA, USA,  
www.kustomxpress.com

**Labsphere Inc**

231 Shaker St, PO Box 70, North Sutton,  
NH 03260 USA, TEL: 1 603 927 4266,  
FAX: 1 603 927 4694  
labsphere@labsphere.com,  
www.labsphere.com

■ See ad on page 44

Offers a wide range of LED and SSL testing packages with the flexibility to tailor a system for prototype to production testing. Solution-based software enables users to save multiple testing profiles for individual testing parameters and data manipulation. In seconds you can have research-grade thermal, optical and electrical characterization—whatever design stage or user level.

**Laird Technologies**

Cleveland, OH, USA, 1 888 246 9050

**Lambda Research Corp**

25 Porter Rd, 2nd Fl, Littleton, MA  
01460-1434 USA, TEL: 1 978 486 0766,  
FAX: 1 978 486 0755, sales@lambdares.com,  
www.lambdares.com

■ See ad on page 39

Provides optical design solutions by offering software products and consulting. Software includes TracePro, 3D optomechanical solid modeling software for virtual prototyping for design and analysis of almost any optical or illumination system in various markets, such as illumination, optics, aerospace, biomedical and OSLO for optical design and analysis of image-forming lens systems. TracePro and OSLO are marketed to optical, mechanical lighting engineers and designers, researchers and scientists as a complete solution for design and analysis.

**Lambert Lighting Technology Co Ltd**

Shenzhen, China, www.lambert-led.com

**Lanzarote LED**

Arrecife, Las Palmas, Spain,  
www.lanzarote-led.com

**LayTec AG**

Berlin, Germany, www.laytec.de

**LCDTVStands2Go.com**

Bristol, RI, USA, www.lcdtvstands2go.com

**LLDLIGHT.com - LDD Trading Associates LLC**

New Boston, NH, USA, www.lddligh.com

**Leadray Energy Co Ltd**

Jhubei City, Hsinchu, Taiwan, www.leadray.com

**The LED Advocacy Group**

Baltimore, MD, USA, www.ledconsultants.com

**LEDAquariums**

Phoenix, AZ, USA, www.ledaquariums.com

**LED Argentina SA**

CABA, Buenos Aires, Argentina,  
www.led-argentina.com

**The LED Bulb Co**

Ft Myers, FL, USA,  
www.theledbulbcompany.com

**LEDCanada.com**

Vancouver, BC, Canada, www.ledcanada.com

**LEDcentre.uk.com**

London, UK, www.ledcentre.uk.com

**LED Concepts**

Santa Ana, CA, USA, www.ledconcepts.com

**LeddarTech**

Quebec City, QC, Canada, www.leddartech.com

**LED-Depot**

Middlesbrough, UK, www.led-depot.co.uk

## company directory | LEDDYNAMICS INC

**LEDdynamics Inc**

44 Hull St, Randolph, VT 05060 USA,  
TEL: 1 802 728 4533, FAX: 1 802 728 3800,  
info@leddynamics.com, www.luxdrive.com

Provides cutting-edge technology, services and education that enables and accelerates the adoption of LEDs as a medium of illumination. Comprising three divisions: the LUXdrive range of drivers, modules and engines, the EverLED range of bulbs and fixtures and the LEDthinktank innovative engineering group. Offers creative solutions to virtually any LED lighting challenge.

**LED Eco Lights**

Camberley, Surrey, UK, [www.ledecolights.com](http://www.ledecolights.com)

**LED Emerald**

Los Angeles, CA, USA, [www.ledemerald.com](http://www.ledemerald.com)

**LED Engin Inc**

San Jose, CA, USA, [www.ledengin.com](http://www.ledengin.com)

**ledgrowlight-hydro.com**

Los Angeles, CA, USA,  
[www.ledgrowlight-hydro.com](http://www.ledgrowlight-hydro.com)

**LED Grow Master Global LLC**

Bend, OR, USA, [www.led-grow-master.com](http://www.led-grow-master.com)

**LEDIKO**

Wroclaw, Poland, [www.lediko.com](http://www.lediko.com)

**LED International Lighting Inc**

Lenexa, KS, USA, [www.Ledili.com](http://www.Ledili.com)

**Ledionopto Lighting Inc**

Taipei, Taiwan, [www.ledionopto-lighting.com](http://www.ledionopto-lighting.com)

**LEDKE Technology Co Ltd**

Shenzhen, Guangdong, China, [www.ledke.com](http://www.ledke.com)

**The LED Lamp Co**

Ft Myers, FL, USA,  
[www.theledlampcompany.com](http://www.theledlampcompany.com)

**LED-LES**

Englewood, CO, USA, [www.ledles.com](http://www.ledles.com)

**LED Lighting Inc**

Northbrook, IL, USA, [www.ledlightinginc.com](http://www.ledlightinginc.com)

**LED Lighting Power Supplies**

Aldermaston, Berkshire, UK,  
[www.led-lighting-power-supplies.com](http://www.led-lighting-power-supplies.com)

**LED Lights Canada**

Edmonton, AB, Canada,  
[www.ledlightscanada.com](http://www.ledlightscanada.com)

**LED Light Works**

Yaroomba, Queensland, Australia,  
[www.ledlightworks.com.au](http://www.ledlightworks.com.au)

**LED Linear GmbH**

Pascalstr 9, Neukirchen-Vluyn 47506  
Germany, TEL: 49 2845 98462 112,  
FAX: 49 2845 98462 120,  
info@led-linear.com, [www.led-linear.com](http://www.led-linear.com)

## ■ See ad on page 69

Provides linear LED based lighting solutions with a superior cost/benefit ratio. The company's products contain the best worldwide available LED and components. The signature product lines are VarioLED Flex and XooLux. With true lighting class LED products, the company helps customers to shape a better world through energy efficient lighting solutions. Delivers LED lighting solutions based on flexible printed circuit boards with an input voltage of 12 or 24V DC. Products are available in up to 10 m in length with a self adhesive backside. They are designed for plug-and-play operations and can be equipped with self adhesive secondary lenses. The product scope includes interior and exterior LED lamps (IP67) and plug-and-play luminaires (IP54). The lighting class product line provides 6 different color temperatures from 2700 to 6500K, up to 500 lumens per foot (6500K) and 92 CRI (3500K). The maximum available efficacy is 75 lm/W. A full range of accessories to install and control the LED solutions (remote, 1-10V, DMX) guarantees the suitability for a wide range of applications. With extensive expertise and proprietary technology, the company designs, develops and manufactures a broad range of custom lighting systems. Products are lead-free and RoHS conform.

**Ledlink Optics Inc**

15F, No 655, Bannan Rd, Chung-Ho Dist,  
New Taipei City 235 Taiwan,  
TEL: 886 2 8227 6126,  
FAX: 886 2 8227 6127,  
service@ledlink-optics.com,  
[www.ledlink-optics.com](http://www.ledlink-optics.com)

## ■ See ad on page 5

Established in April 2008, the company designs and manufactures optics for the emerging solid-state lighting companies such as Cree, Citizen, Edison, Lumileds, Nichia, Osram, Samsung, Seoul and other LED manufacturers. The mission is to help customers optimize optics performance in creating solid-state lighting products. Lenses are available in a wide variety of packages with numerous beam pattern options and sizes, such as residential, commercial, street or architectural lighting.

**LEDLITE007 OPT-ELE Co Ltd**

Shenzhen, China, [www.ledlite007.com](http://www.ledlite007.com)

**Ledlume products**

Johannesburg, South Africa,  
[www.ledlume.co.za](http://www.ledlume.co.za)

**Led Mode Ltd**

Shenzhen, Guangdong, China,  
[www.led-mode.com](http://www.led-mode.com)

**LEDnovation Inc**

Tampa, FL, USA, [www.lednovation.com](http://www.lednovation.com)

**LED One (Hangzhou) Co Ltd**

Hangzhou, China, [www.ledone-co.com](http://www.ledone-co.com)

**LED Optical Solutions**

Washington, MI, USA, [www.ledoscorp.com](http://www.ledoscorp.com)

**LED Power Inc**

Irvine, CA, USA, [www.ledpower.com](http://www.ledpower.com)

**LED Retro8**

Parsippany, NJ, USA, [www.ledretro8.com](http://www.ledretro8.com)

**LED Roadway Lighting Ltd**

Halifax, NS, Canada,  
[www.ledroadwaylighting.com](http://www.ledroadwaylighting.com)

**LEDS America Inc**

Jupiter, FL, USA, [www.ledsamerica.com](http://www.ledsamerica.com)

**LedScene sa**

Capital Federal, Buenos Aires, Argentina,  
[www.ledscene.com.ar](http://www.ledscene.com.ar)

**LED Screens Pty Ltd**

North Ryde, NSW, Australia,  
[www.led-screens.com.au](http://www.led-screens.com.au)

**The LED Shop**

Herberton, Queensland, Australia,  
[www.ledshoponline.com](http://www.ledshoponline.com)

**LED Signs Pty Ltd**

North Ryde, NSW, Australia,  
[www.led-signs.com.au](http://www.led-signs.com.au)

**LEDs N Solar**

Ahmedabad, India, [www.ledsnsolar.com](http://www.ledsnsolar.com)

**LED Source**

Wellington, FL, USA, [www.ledsource.com](http://www.ledsource.com)

**LED Specialists Inc**

Holbrook, NY, USA, [www.ledspecialists.com](http://www.ledspecialists.com)

**The LED Studio**

Petersfield, Hampshire, UK,  
[www.theledstudio.co.uk](http://www.theledstudio.co.uk)

**LEDSupply**

Randolph, VT, USA,  
[www.ledsupply.com/index.php](http://www.ledsupply.com/index.php)

**LED To Lite**

Nokomis, FL, USA, [www.ledtolite.com](http://www.ledtolite.com)

**LED Transformations LLC**

Stanton, NJ, USA, [www.ledtransformations.com](http://www.ledtransformations.com)

**LEDtronics Inc**

Torrance, CA, USA, [www.ledtronics.com](http://www.ledtronics.com)



**LEDvista Ltd**

Enniscorthy, County Wexford, Ireland,  
[www.ledvista.ie](http://www.ledvista.ie)

**LED Waves**

Brooklyn, NY, USA, [www.ledwaves.com](http://www.ledwaves.com)

**Ledway**

Ballivor, Meath, Ireland, [www.ledway.ie](http://www.ledway.ie)

**LEDworx GmbH**

Vienna, Austria, [www.ledworx.com](http://www.ledworx.com)

**Lektron Inc**

Tulsa, OK, USA, [www.lektroninc.com](http://www.lektroninc.com)

**Lenoo Electronics Co Ltd**

Tu-Cheng City, Taipei, Taiwan, [www.lenoo.com](http://www.lenoo.com)

**Leotek Electronics USA Corp**

Milpitas, CA, USA, [www.leotek.com](http://www.leotek.com)

**Lextar Electronics Corp**

Hsinchu, Taiwan, [www.lextar.com](http://www.lextar.com)

**LG Innotek**

Seoul, Korea, [www.lginnotek.com/main.jsp](http://www.lginnotek.com/main.jsp)

**Light-Based Technologies**

Vancouver, BC, Canada, [www.lightbased.com](http://www.lightbased.com)



**LIGHTTECH™**

**Lighttech Electronics**

1511 N Westshore Blvd, Tampa, FL  
33607 USA, TEL: 1 888 544 4832,  
[info@lighttechinc.com](mailto:info@lighttechinc.com), [www.lighttechinc.com](http://www.lighttechinc.com)

Offers LED drivers with the fullest range of LED power supplies anywhere. Offers LED drivers in constant current and constant voltage, non-dimming and dimming drivers, phase-control, trailing edge or 1–10V dimming, and various applications specific products, including the signage market.

**Light Emission Technology Ltd**

New York, NY, USA,  
[www.lightemissiontech.com](http://www.lightemissiontech.com)

**Light Emitting Designs LLC**

North Barrington, IL, USA, [www.led-llc.com](http://www.led-llc.com)

**Light Engines LLC**

Sturbridge, MA, USA, [www.lightengines.com](http://www.lightengines.com)

**Light Foot LED**

Hove, UK, [www.lightfootled.com](http://www.lightfootled.com)

**LightGuard**

Burgaw, NC, USA, [www.lightguard.com](http://www.lightguard.com)

**Lighthouse WorldWide LLC**

Milford, CT, USA, [www.lighthouseww.com](http://www.lighthouseww.com)

**Lighting and Production Resources**

Winter Park, FL, USA, [www.mylpr.com](http://www.mylpr.com)

**Lighting Orient Co Ltd**

Shenzhen, China, [www.ledlightsorient.com](http://www.ledlightsorient.com)

**Lighting Science Group Corp**

Satellite Beach, FL, USA, [www.lsgc.com](http://www.lsgc.com)

**Lighting Sciences Inc**

Scottsdale, AZ, USA,  
[www.lightingsciences.com](http://www.lightingsciences.com)

**Light Ocean Technology Corp**

Hsinchu City, Taiwan, [www.lightocean.com.tw](http://www.lightocean.com.tw)

**Light Prescriptions Innovators LLC**

Altadena, CA, USA, [www.lpi-llc.com](http://www.lpi-llc.com)

**Lightscape Materials Inc**

Princeton, NJ, USA,  
[www.lightscapematerials.com](http://www.lightscapematerials.com)

**Light Solution**

Kharkov, Ukraine, [www.lightsolution.com.ua](http://www.lightsolution.com.ua)

**Lightspeed Technologies Inc**

Campbell, CA, USA, [www.light-speed-tech.com](http://www.light-speed-tech.com)

**LightWild**

Overland Park, KS, USA, [www.lightwild.com](http://www.lightwild.com)

**Litek Electronics Co Ltd**

Shulin City, Taipei County, Taiwan,  
[www.litek.com](http://www.litek.com)

**Lily Lighting Ltd**

Toronto, ON, Canada, [www.lilyleds.com](http://www.lilyleds.com)

**Linde Electronics & Specialty Gases**

Stewartville, NJ, USA,  
[www.linde-gas.com/electronics](http://www.linde-gas.com/electronics)

**Linear Technology**

Milpitas, CA, USA, [www.linear.com](http://www.linear.com)

**Lingshan Trading Co Ltd**

Shenzhen, Guangdong, China, [www.lstcl.com](http://www.lstcl.com)

**Lingshan Trading Co Ltd**

Higher Denham, Middlesex, UK, [www.lstcl.com](http://www.lstcl.com)

**Liteon France**

Poissy, France, [www.liteon.com/opto](http://www.liteon.com/opto)

**Litetronics International Inc**

Alsip, IL, USA, [www.litetronics.com](http://www.litetronics.com)

**LiteTronix Optotek Inc**

Palo Alto, CA, USA, [www.litetrnix.com.tw](http://www.litetrnix.com.tw)

**LittleFootprint Lighting Inc**

Santa Cruz, CA, USA, [www.lfplighting.com](http://www.lfplighting.com)

**Logitech Ltd**

Glasgow, Strathclyde, UK, [www.logitech.uk.com](http://www.logitech.uk.com)

**Logolight**

Quint-Fonsegrives, France, [www.logolight.fr](http://www.logolight.fr)

**LonTin Industry Co Ltd**

Shanghai, China, [www.lontinled.com](http://www.lontinled.com)

**LORD Corp**

Cary, NC, USA, [www.lord.com](http://www.lord.com)

**Lotus LED Lights**

Surrey, BC, Canada, [www.lotusledlights.com](http://www.lotusledlights.com)

**Lucite International Inc**

Cordova, TN, USA, [www.lucitelux.com](http://www.lucitelux.com)

**Lumastrobe Warning Lights**

Midland Park, NJ, USA, [www.lumastrobe.com](http://www.lumastrobe.com)

**Lumenarex Inc**

Lafayette, CO, USA, [www.lumenarex.com](http://www.lumenarex.com)

**Lumenpulse**

Montreal, QC, Canada, [www.lumenpulse.com](http://www.lumenpulse.com)

**Lumentra Inc**

Toronto, ON, Canada, [www.lumentra.com](http://www.lumentra.com)

**Lumex**

Palatine, IL, USA, [www.lumex.com](http://www.lumex.com)

**LumiCe Co Ltd**

Seoul, Korea, [www.lumice.com](http://www.lumice.com)

**LUMICHIP**  
CREATING LIGHT

**Lumichip Ltd**

1701 Tai Yau Bldg, 181 Johnston Rd,  
Wanchai, Hong Kong, TEL: 852 23 438 438,  
FAX: 852 23 438 448, [sales@lumichip.com](mailto:sales@lumichip.com),  
[www.lumichip.com](http://www.lumichip.com)

Provides customized LED lighting components. The product lines consist of specialized LED and COB devices tailor made to meet demanding requirements of general and specialized lighting industries. Lumichip designs, manufactures and markets proprietary LED components and also offers custom designs and manufacturing services for LED light engines and luminaries in various lighting industry applications. Design and manufacturing operations in Asia and Europe guarantee product and design support globally.

**Lumicrest Lighting Solutions Inc**

Toronto, ON, Canada, [www.lumicrest.com](http://www.lumicrest.com)

**Lumi Lime Ltd**

Kowloon, Hong Kong, [www.lumilime.com](http://www.lumilime.com)

**Lumimax Optoelectronic Technology**

Fremont, CA, USA, [www.lumimaxusa.com](http://www.lumimaxusa.com)

**Luminarch**

Lincolnwood, IL, USA, [www.luminarch.com](http://www.luminarch.com)

**Luminit**

Torrance, CA, USA, [www.luminitco.com](http://www.luminitco.com)

**Luminlite**

Jhubei City, Hsinchu, Taiwan,  
[www.luminlite.com.tw](http://www.luminlite.com.tw)

**Luminus Devices**

BillERICA, MA, USA, [www.luminus.com](http://www.luminus.com)

**Lumisave Industrial LED Technologies Ltd**

Pr George, BC, Canada, 1 250 563 7283

**Lumoluce**

Heerhugowaard, The Netherlands,  
[www.lumoluce.com](http://www.lumoluce.com)

## company directory | LUMOTECH

## Lumotech®

## Lumotech

Nijverheidsplein 16, Heerhugowaard 1704RB  
The Netherlands, TEL: 31 72 5723000,  
FAX: 31 72 5723030, [sales@lumotech.com](mailto:sales@lumotech.com),  
[www.lumotech.com](http://www.lumotech.com)

## ■ See ad on page 48

Manufactures high-quality LED drivers, boards, strips and other electrical semifinished products. Is a well known company for its solid engineering and durable products. All engineering and manufacturing takes place in-house in branches throughout Europe.

## Lutron Electronics

Coopersburg, PA, USA, [www.lutron.com](http://www.lutron.com)

## Luums International BV

Culemborg, The Netherlands, [www.luums.com](http://www.luums.com)

## LuxInTec SL

Aldeamayor de San Martin - Valladolid, Spain,  
[www.luxintec.com](http://www.luxintec.com)

## Luxon Sp zoo

Wroclaw, Dolny Slask, Poland, [www.luxon.pl](http://www.luxon.pl)

## LUX-TSI Ltd

Pencoed, Bridgend, UK, [www.lux-tsi.com](http://www.lux-tsi.com)

## LVC Connectors Inc

Montreal, QC, Canada, [www.snapkonek.com](http://www.snapkonek.com)



## Lynk Labs Inc

2511 Tehnology Dr, Suite 108, Elgin,  
IL 60124 USA, TEL: 1 847 783 0123,  
FAX: 1 847 783 0130, [lynk@lynklabs.com](mailto:lynk@lynklabs.com),  
[www.lynklabs.com](http://www.lynklabs.com)

## ■ See ad on page 6

Manufactures AC LED packages, light engines, and drive and system technology. The company's patented AC LED light engine technology delivers product that simplifies the design challenges and reduces the cost of integrating LEDs into AC power sources.

## Macroblock Inc

Hsinchu, Taiwan, [www.mblock.com.tw](http://www.mblock.com.tw)

## Madrix

Dresden, Germany, [www.madrix.com](http://www.madrix.com)



## Magtech Industries Corp

5625-A S Arville St, Las Vegas, NV  
89118 USA, TEL: 1 702 364 9998,  
FAX: 1 702 364 1562,  
[csupport@magtechind.com](mailto:csupport@magtechind.com),  
[www.magtechind.com](http://www.magtechind.com)

Designs, manufactures, and distributes high-quality, switch-mode power supplies. Provides solutions including wall-mount, desktop adaptors, LED power supply/drivers, industry standard open frame and close frame power supplies and DIN rail mount industrial switchers.

## Majantys

Le Bourget du Lac, France, [www.majantys.com](http://www.majantys.com)

## Mango Electronics

Bexhill on Sea, East Sussex, UK,  
[www.sauna-steam.co.uk](http://www.sauna-steam.co.uk)

## MANOR doo

Cakovec, Croatia, [www.manor.hr](http://www.manor.hr)

## Marc LED Ltd

Epsom, Surrey, UK, [www.marclcd.com](http://www.marclcd.com)

## Marian Inc

Indianapolis, IN, USA, [www.marianinc.com](http://www.marianinc.com)

## Marktech Optoelectronics

Latham, NY, USA, [www.marktechopto.com](http://www.marktechopto.com)

## Materion Corp

Mayfield Heights, OH, USA, [www.materion.com](http://www.materion.com)

## Matrix LED

Cromer, NSW, Australia, [www.matrixled.com.au](http://www.matrixled.com.au)



## Matrix Lighting Ltd

Rm 223-231, 2/F, E Wing, TST Centre,  
66 Mody Rd, TST E, Kowloon 852 Hong  
Kong, TEL: 2723 2302, FAX: 2722 1040,  
[lighting@matrix.hk.com](mailto:lighting@matrix.hk.com), [www.viribright.com](http://www.viribright.com)

## ■ See ad on inside front cover

Manufactures Viribright brand of LED lighting products and focuses on the development and manufacturing of commercial and residential LED lighting solutions. The development team focuses on innovation in the research and development of LED driver, mechanical, thermal management, optics, and product design for mass production. The innovations and "patent pending" technologies enable the delivery of the highest quality products at incredible value with manufacturing in both Vietnam and mainland China.

## Maxim Integrated Products

Sunnyvale, CA, USA, [www.maxim-ic.com](http://www.maxim-ic.com)

## Maxx LED Inc

Buford, GA, USA, [www.maxxled.com](http://www.maxxled.com)

## MAZeT GmbH

Jena, Germany, [www.mazet.de](http://www.mazet.de)

## McWong International Inc

Sacramento, CA, USA, [www.mcwonginc.com](http://www.mcwonginc.com)



## Mean Well USA Inc

44030 Fremont Blvd, Fremont, CA  
94538 USA, TEL: 1 510 683 8886,  
FAX: 1 510 683 8899,  
[michael@meanwellusa.com](mailto:michael@meanwellusa.com),  
[www.meanwellusa.com](http://www.meanwellusa.com)

## ■ See ad on page 55

Manufactures standard power supplies since 1982. Is a global power supply company, with more than 2500 models for commercial and industrial applications. Provides great quality, competitive pricing, on-time delivery and long term power partner for business.

## Medical Lighting Systems

Santa Ana, CA, USA,  
[www.medicallightingsystems.com](http://www.medicallightingsystems.com)

## Megasil Chemical Co Ltd

Taipei, Taiwan, [www.megasil.com.tw](http://www.megasil.com.tw)

## Meiji Techno America

Santa Clara, CA, USA, [www.meijitechno.com](http://www.meijitechno.com)

## Melux Control Gears Pvt Ltd

Pune, Maharashtra, India,  
[www.melconindia.com](http://www.melconindia.com)



## Mentor Graphics Corp

300 Nickerson Rd, Marlborough, MA  
01752 USA, TEL: 1 800 547 3000,  
FAX: 1 508 480 0882,  
[mad\\_info@mentor.com](mailto:mad_info@mentor.com),  
[www.mentor.com/mechanical](http://www.mentor.com/mechanical)

Provides test equipment (chip, package and power LED characterization) and virtual prototyping for electronics. Using the product and consultancy services, customers accelerate and optimize their design processes by predicting the behavior of proposed designs before building physical prototypes.

## Messagemaker Displays Ltd

Surrey, UK, [www.messagemaker.co.uk](http://www.messagemaker.co.uk)

**Metropolitan Energy Service-Gulf Coast LEDs**

Gulf Breeze, FL, USA,  
[www.mesgulfcoastleds.com](http://www.mesgulfcoastleds.com)

**Mica Lighting Co Inc**

Fullerton, CA, USA, [www.micalighting.com](http://www.micalighting.com)

**Microlynx Systems Ltd**

Calgary, AB, Canada,  
[www.microlynxsystems.com](http://www.microlynxsystems.com)

**Micro Modular System**

Bayan Lepas, Penang, Malaysia,  
[www.mmsis.com](http://www.mmsis.com)

**Microsemi Corp**

One Enterprise, Aliso Viejo, CA 92679 USA,  
TEL: 1 949 380 6100, FAX: 1 949 215 4996,  
[sales.gg@microsemi.com](mailto:sales.gg@microsemi.com), [www.microsemi.com](http://www.microsemi.com)

Provides semiconductor solutions differentiated by power, security, reliability, and performance. The company's light management product portfolio includes CCFL and LED drivers IC and modules, light sensors, integrated LED drivers, and power supply modules optimized for general lighting applications. Additional products include high-performance, high-reliability analog and RF devices, mixed-signal and RF integrated circuits, customizable system-on-chip (cSoC) solutions, field programmable gate arrays (FPGAs), and complete subsystems.

**Millennium Visual Systems**

Chestnut Ridge, NY, USA,  
[www.millenniumvisuals.com](http://www.millenniumvisuals.com)

**Milliken Distribution**

Englewood, FL, USA,  
[www.millikendistribution.com](http://www.millikendistribution.com)

**Mimaki ECO Lighting Solutions**

San Marcos, CA, USA, [www.mimaki-ls.com](http://www.mimaki-ls.com)

**MIROR Lighting Inc**

Lenexa, KS, USA, [www.mirrorlighting.com](http://www.mirrorlighting.com)

**MKS Instruments Inc**

Andover, MA, USA, [www.mksinst.com](http://www.mksinst.com)

**Molex**

Lisle, IL, USA, [www.molex.com](http://www.molex.com)

**Moons Industries (Europe) srl**

Gross-Zimmern, Germany,  
[www.moonsindustries.eu](http://www.moonsindustries.eu)

**MOSO USA Inc**

Cerritos, CA, USA, [www.mosousa.com](http://www.mosousa.com)

**Motif Architectural Lighting**

Santa Ana, CA, USA, [www.motiflighting.com](http://www.motiflighting.com)

**Moltun International**

Cheyenne, WY, USA, [www.moltun.com](http://www.moltun.com)

**MP Producciones SA de CV**

Mexico City, Distrito Federal, Mexico,  
[www.mpproducciones.com.mx](http://www.mpproducciones.com.mx)

**MSC Vertriebs GmbH**

Stutensee, Germany, [www.msc-ge.com](http://www.msc-ge.com)

**MSP Corp**

Shoreview, MN, USA, [www.msppcorp.com](http://www.msppcorp.com)

**MTEC GmbH**

Wels, Austria, [www.mtec.at](http://www.mtec.at)

**MultiMedia Farms**

Canfield, OH, USA, [www.multimediafarms.com](http://www.multimediafarms.com)

**Multiwave Corp**

Bedminster, NJ, USA, [www.mutiwavecorp.com](http://www.mutiwavecorp.com)

**Nanker LED Lighting Ltd**

Guangzhou, China, [www.nanker.com](http://www.nanker.com)

**National LED Direct**

Markham, ON, Canada,  
[www.nationalledirect.com](http://www.nationalledirect.com)

**National Semiconductor**

Santa Clara, CA, USA, [www.national.com](http://www.national.com)

**Nav-comm**

Utley, Yorkshire, UK, [www.nav-comm.net](http://www.nav-comm.net)

**NEON-EC Ltd**

St. Petersburg, Russian Federation,  
[www.e-neon.ru](http://www.e-neon.ru)

**NEON-EK Ltd**

Varna, Bulgaria, [www.e-neon.ru](http://www.e-neon.ru)

**Neo-Neon LED Lighting International Ltd**

He Shan City, Quangdong, China,  
[www.neo-neon.com](http://www.neo-neon.com)

**Neon-LED International (HK) Ltd**

Guandong, China, [www.neon-led.com](http://www.neon-led.com)

**Neoti**

Bluffton, IN, USA, [www.neoti.com](http://www.neoti.com)

**NES Light**

Manassas, VA, USA, [www.neslight.com](http://www.neslight.com)

**NET LED Lighting**

Cambridge, Cambridgeshire, UK,  
[www.netledlighting.co.uk](http://www.netledlighting.co.uk)

**Newark**

Chicago, IL, USA, [www.newark.com](http://www.newark.com)

**Next Generation Lights Inc**

Flushing, NY, USA, [www.nextgenlights.com](http://www.nextgenlights.com)

**Nexus Lighting Inc**

124 Floyd Smith Dr, Suite 300,  
Charlotte, NC 28262 USA,  
TEL: 1 704 405 0416, FAX: 1 704 405 0422,  
[sales@nexuslighting.com](mailto:sales@nexuslighting.com),  
[www.nexuslighting.com](http://www.nexuslighting.com)

Provides high-performance LED replacement light bulbs under the Array Lighting line of products. Committed to leading edge design and introducing LED products that set the standard in the industry in terms of performance and reliability.

**Nichia America Corp**

Wixom, MI, USA, [www.nichia.com](http://www.nichia.com)

**NIOptech**

Corona, CA, USA, [www.nioptech.com](http://www.nioptech.com)

**Nitride Crystals Inc**

Deer Park, NY, USA, [www.nitride-crystals.com](http://www.nitride-crystals.com)

**NMB Technologies Corp**

9730 Independence Ave, Chatsworth,  
CA 91311 USA, TEL: 1 818 341 3355,  
FAX: 1 818 341 8207, [lighting@nmbtc.com](mailto:lighting@nmbtc.com),  
[www.nmbtc.com](http://www.nmbtc.com)

Manufactures electro-mechanical components, including LED dimmable programmable drivers, as well as miniature ball bearings, cooling fans, precision small motors, as well as other electronic components.

**Nooteboom Elektronica**

Helmond, Noord Brabant, The Netherlands,  
[www.nooteboom.biz](http://www.nooteboom.biz)

**Nordson ASYMTEK**

2747 Loker Ave W, Carlsbad, CA  
92010 USA, TEL: 1 760 930 3345,  
[info@nordsonasymtek.com](mailto:info@nordsonasymtek.com),  
[www.nordsonasymtek.com](http://www.nordsonasymtek.com)

Designs and manufactures a full line of automated precision fluid dispensing, jetting, and conformal coating systems, supported by a global applications and service network. The award-winning non-contact dispensing system jets fluid through windows as small as 0.4 mm into hard-to-reach cavities for side-view LEDs and for LED encapsulation.

## company directory | NORLUX

**Norlux**Carol Stream, IL, USA, [www.norluxcorp.com](http://www.norluxcorp.com)**Northeast Green Energy Group Inc**Merrimac, MA, USA, [www.negeg.com](http://www.negeg.com)**Notis Design**Novocherkassk, Rostov-on-don, Russian Federation, [www.notis-group.ru](http://www.notis-group.ru)**NU HORIZONS  
ELECTRONICS**

An Arrow Company

**Nu Horizons Electronics**70 Maxess Rd, Melville, NY 11747 USA,  
TEL: 1 631 396 5000, FAX: 1 631 396 5050,  
[onlinesales@nuhorizons.com](mailto:onlinesales@nuhorizons.com),  
[www.nuhorizons.com/ledlighting](http://www.nuhorizons.com/ledlighting)

## ■ See ad on page 15

Understands the complexity of designing with today's leading edge LED technology. Specialists can help from concept to design to production, reduce development cycles and enable customers to quickly and efficiently adopt LED lighting technology. Services include component selection, engineering and design services, prototyping, sampling, retrofitting, testing and supply chain services. Suppliers offer leading-edge products and services with outstanding customer support, cross-discipline design tools and educational opportunities. An Arrow Electronics company.

**NuSil Technology**Carpinteria, CA, USA, [www.nusil.com](http://www.nusil.com)**Nuventix Inc**Austin, TX, USA, [www.nuventix.com](http://www.nuventix.com)**NXP Semiconductors**Eindhoven, France, [www.nxp.com](http://www.nxp.com)**Obducat Technologies AB**Malmo, Sweden, [www.obducat.com](http://www.obducat.com)**OCG Lighting**Chessington, Surrey, UK, [www.ocglighting.com](http://www.ocglighting.com)**OEC AG**Munich, Germany, [www.oec.net](http://www.oec.net)**Ohmax Lighting Co Ltd**Shenzhen, China, [www.led-ohmax.com](http://www.led-ohmax.com)**OMS**Dojc, Slovak Republic, [www.oms.sk](http://www.oms.sk)**ONLY Technology LTD**Shenzhen, China, [www.h-only.com](http://www.h-only.com)**On Semiconductor**

Phoenix, AZ, USA, 1 602 244 3182

**Onstate Technologies LED Lighting**New Westminster, BC, Canada,  
[www.onstatetech.com](http://www.onstatetech.com)**Operations Technology Inc**Blairstown, NJ, USA, [www.optek.net](http://www.optek.net)**opsira GmbH**Weingarten, Germany, [www.opsira.de](http://www.opsira.de)**Optical Illumination Corp**Craig, CO, USA, [www.oic-us.com](http://www.oic-us.com)**Optical Semiconductors Inc**Peekskill, NY, USA,  
[www.opticalsemiconductors.com](http://www.opticalsemiconductors.com)**Optics Balzers AG**Balzers, Liechtenstein, [www.opticsbalzers.com](http://www.opticsbalzers.com)**OPTILED Lighting**Kowloon, Hong Kong, [www.optiled.com](http://www.optiled.com)**OPTIS SAS**Toulon Cedex 9, France, [www.optis-world.com](http://www.optis-world.com)**Optocap Ltd**Livingston, Scotland, UK, [www.optocap.com](http://www.optocap.com)**optocore****Optocore Ltd**27 Messogion Ave, Athens 11526 Greece,  
TEL: 302 107759433, FAX: 302 107781118,  
[info@optocore.gr](mailto:info@optocore.gr), [www.optocore.gr](http://www.optocore.gr)

Offers SMD LED implementation. As partner and exclusive distributor of Taiwan producer Alder, offers solutions from LED chip to complete lighting fixtures. The philosophy is to implement the latest technologies in LEDs in order to provide solutions tailor made to suit the requirements of each and every customer but also to secure the sustainability, efficiency and the energy payback for every project carried forward. The company has gained important know-how on the implementation of LEDs in the areas of industrial, architectural, street and urban lighting retail cooling and many other applications promoting the LED technologies as sustainable and energy efficient solutions.

**OPTO DIODE CORP.****Opto Diode Corp**750 Mitchell Rd, Newbury Park, CA  
91320 USA, TEL: 1 805 499 0335,  
FAX: 1 805 499 8108, [sales@optodiode.com](mailto:sales@optodiode.com),  
[www.optodiode.com](http://www.optodiode.com)

Supplies the global market with reliable, high-quality IR LEDs and custom LEDs in the visible range since 1981. Latest products include high-performance photodetectors, both standard and custom devices, manufactured in the domestic, US facility. Signature high standards and uncompromising attention to quality and detail inherent in the LEDs, are now incorporated in the new photodetectors product line.

**Optogan GmbH**Landshut, Germany, [www.optogan.com](http://www.optogan.com)**Optoma Technology Inc**Fremont, CA, USA, [www.optomaled.com](http://www.optomaled.com)**Optomistic Products Inc**South Freeport, ME, USA,  
[www.optomisticproducts.com](http://www.optomisticproducts.com)**Optogan Group**Landshut, Germany, [www.optogan.com](http://www.optogan.com)**Opto System Co Ltd**Kyotanabe City, Kyoto, Japan,  
[www.opto-system.co.jp/en](http://www.opto-system.co.jp/en)**Opto Tech Corp**Hsinchu, Taiwan, [www.opto.com.tw](http://www.opto.com.tw)**Optotek Ltd**Ottawa, ON, Canada, [www.optotek.com](http://www.optotek.com)**Opulent Technologies Inc**San Jose, CA, USA, [www.opulenttech.com](http://www.opulenttech.com)**Orb Optronix Inc**1003 7th Ave, Kirkland, WA 98003 USA,  
TEL: 1 425 605 8500, FAX: 1 801 912 2645,  
[sales@orboptronix.com](mailto:sales@orboptronix.com),  
[www.orboptronix.com](http://www.orboptronix.com)

## ■ See ad on page 35

Dedicated to leading LED technology adoption by providing test and measurement products and engineering services for illumination, optical and opto-electronic industries. LED measurement lab provides electrical-optical-thermal characterization of LEDs as well as LED lifetime studies, Energy Star/LM-79 SSL luminaire testing, LED binning and sorting, and LED eye safety measurements. LED Technology Center provides services by experienced high-power LED engineering staff that includes optical, thermal, mechanical, electrical, software, and industrial design engineering experts.

**Oree Advanced Illumination Ltd**Ramat Gan, IL, Israel, [www.oree-inc.com](http://www.oree-inc.com)**Orient Lighting Co Ltd**Sydney, NSW, Australia, [www.orientlighting.com](http://www.orientlighting.com)**OSA Opto Light GmbH**Berlin, Germany, [www.osa-opto.com](http://www.osa-opto.com)

**OSRAM**

Opto Semiconductors

**OSRAM Opto Semiconductors GmbH**

Leibnizstr 4, Regensburg 93055  
Germany, TEL: 49 941 850 1700,  
FAX: 49 941 850 3302,  
support@osram-os.com, www.osram-os.com  
■ See ad on page 67

Manufactures optoelectronic semiconductors for the lighting, sensor and visualization sectors, and regularly launches new technologies and products that make a lasting difference to these sectors. More than three decades of experience in the development and manufacture of optoelectronic semiconductor components have made the company one of the most significant innovation and technology drivers in Germany.

**OSRAM SYLVANIA**

100 Endicott St, Danvers, MA  
01923-3623 USA, TEL: 1 978 777 1900,  
FAX: 1 978 750 2152,  
ledlighting@sylvania.com, www.sylvania.com  
■ See ad on page 97

Offers innovative, integrated SSL system solutions for automotive and general lighting applications that leverage more than a century of experience in serving the lighting industry. Products and services offered include the design, development and manufacturing of SSL modules, power supplies and control systems with industry-leading quality and a strong product warranty. Direct access to OSRAM Opto Semiconductor, the second largest supplier of LEDs, enables the rapid introduction of innovative, high-performance SSL products that reflect the state-of-the-art in LED technology.

**Ost-West Media GmbH**

Frankfurt am Main, Hessen, Germany,  
49 69 724 0266

**Outwater Plastics Industries Inc**

Bogota, NJ, USA, www.outwater.com

**Ovation Polymers**

Medina, OH, USA, www.opteminc.com

**Pacer International**

Reading, Berks, UK, www.pacer.co.uk

**Palomar Technologies Inc**

Carlsbad, CA, USA,  
www.palomartechnologies.com

**Para-Coat Technologies Inc**

Johnstown, PA, USA,  
www.pctconformalcoating.com

**Parker Chomerics**

Woburn, MA, USA, www.chomerics.com

**PEER Group**

Kitchener, ON, Canada, www.peergroup.com

**Penchem Technologies Sdn Bhd**

Perai, Penang, Malaysia, www.penchem.com

**PerkinElmer Inc**

Wheeling, IL, USA,  
www.perkinelmer.com/lighting

**Permlight Products Inc**

Tustin, CA, USA, www.permlight.com

**Permlight for Signs**

Tustin, CA, USA, www.permlightforsigns.com

**Phenoptix Ltd**

Nottingham, Nottinghamshire, UK,  
www.phenoptix.com

**PHILIPS  
bodine****Philips Emergency Lighting**

236 Mt Pleasant Rd, Collierville, TN  
38017 USA, TEL: 1 800 223 5728,  
FAX: 1 901 853 8694,  
bodineinfo@philips.com,  
www.philips.com/bodine

Provides solutions for emergency lighting in LED applications. The company's Philips Bodine brand emergency LED drivers allow LED fixtures to serve as code-compliant emergency lighting. The emergency drivers are available for a variety of fixture types, including the Fortimo DLM and SLM. The Philips Bodine ELI-S-20 micro inverter is a great emergency lighting solution for screw-in LED lamps. Philips Emergency Lighting is a division of Philips Electronics North America Corp.

**Philips Hadco**

Littlestown, PA, USA, www.hadco.com

**Philips Hanover Lantern**

Littlestown, PA, USA, www.hanoverlantern.com

**Philips Lighting Co**

Somerset, NJ, USA, www.philips.com/lighting

**Philips Lighting UK**

Guildford, Surrey, UK,  
www.lighting.philips.co.uk

**Philips Lumec**

Boisbriand, QC, Canada, www.lumec.com

**LUXEON**

never before possible

**Philips Lumileds Lighting**

370 W Trimble Rd, San Jose, CA 95131 USA,  
TEL: 1 408 435 6111, FAX: 1 408 435 6855,  
info@lumileds.com, www.philipslumileds.com

## ■ See ad on page 2

Delivers illumination-grade power LEDs and outstanding world-wide service and design support that customers need to rapidly develop solid-state lighting solutions. LUXEON LEDs are used widely in retail, entertainment, outdoor, automotive, portable, digital imaging, signal, and many other applications. The company is a pioneer in epitaxial, packaging, and phosphor technologies specifically designed to deliver the most lumens per watt, per package and per dollar with the widest operating range, reliability and lumen maintenance in the industry.

**Philips Roadway Lighting**

Rosemont, IL, USA,  
www.philips.com/roadwaylighting

**Phillips Engineering LLC**

Portland, CT, USA, www.phillipsengineering.net

**Phoseon Technology Inc**

Hillsboro, OR, USA, www.phoseon.com

**Phostech Optical Consulting & Patent Services**

Elmhurst, IL, USA, www.phostech.com

**Phoster Industries**

Montreal, QC, Canada,  
www.phosterindustries.com

**PicusLED**

Son, Philippines, www.picusled.com

**PLANETech International**

Irvine, CA, USA, www.planetechleds.com

**PLANSEE SE**

Reutte, Austria, www.plansee.com

**Plasma-Therm**

10050 16th St N, St Petersburg, FL  
33716 USA, TEL: 1 727 577 4999,  
FAX: 1 727 577 7035,  
info@plasmatherm.com,  
www.plasmatherm.com

## ■ See ad on page 60

Designs, manufactures and supports plasma etch and plasma enhanced chemical vapor deposition (PECVD) equipment to various high technology market segments and industries. Systems are used in specialty market applications ranging from leading edge university R&D to high volume production.

## company directory | THE POMPEO GROUP

**The Pompeo Group**Albuquerque, NM, USA, [www.pompeo.com](http://www.pompeo.com)**Positronic Industries**Springfield, MO, USA,  
[www.connectpositronic.com](http://www.connectpositronic.com)**Power Audiovisual Rental Co**Madrid, Spain, [www.powerav.es](http://www.powerav.es)**Powerbox**Westminster, CO, USA,  
[www.powerboxusa.com/ssl](http://www.powerboxusa.com/ssl)**PowerLED**Aldermaston, Berkshire, UK,  
[www.powerled.uk.com](http://www.powerled.uk.com)**PowerLED Lighting Corp**Wugu District, New Taipei City, Taiwan,  
[www.powerledopto.com](http://www.powerledopto.com)**Power Partners Inc**Hudson, MA, USA, [www.powerpartners-inc.com](http://www.powerpartners-inc.com)**Power Research Electronics**Oosterhout, The Netherlands,  
[www.pr-electronics.nl](http://www.pr-electronics.nl)**Power Sources Unlimited**Wrentham, MA, USA, [www.psui.com](http://www.psui.com)**Power Vector**Waterloo, ON, Canada, [www.powervector.com](http://www.powervector.com)**Precision Photometrics Ltd**Edinburgh, UK,  
[www.precisionphotometrics.com](http://www.precisionphotometrics.com)**Prema Semiconductor GmbH**Mainz, Germany, [www.prema.com](http://www.prema.com)**Prime Light Pte Ltd**Singapore, [www.prime-light.com](http://www.prime-light.com)**Producciones Marambio & Jorquera SA de CV**Mexico City, Distrito Federal, Mexico,  
[www.mpproducciones.com.mx](http://www.mpproducciones.com.mx)**Products with Passion**Brooklyn, NY, USA,  
[www.productswithpassion.net](http://www.productswithpassion.net)**PROLED®****PROLED - MBN GmbH**Balthasar-Schaller-Str 3, Friedberg, Bavaria  
86316 Germany, TEL: 49 821 60099 0,  
FAX: 49 821 60099 99, [info@proled.com](mailto:info@proled.com),  
[www.proled.com](http://www.proled.com)

## ■ See ad on page 72

LED as the light of the future is trend-setting for the company, which was founded in 1988. Manufactures quality LED products and offers a wide variety of LED products among the internationally registered brands PROLED and MBNLED. PROLED products are developed and designed in Germany and manufactured in Asia. MBNLED products are entirely manufactured in Germany and Europe.

*ProLight Opto*  
[www.prolightopto.com](http://www.prolightopto.com)**ProLight Opto Technology Corp**No 89, Xiyuan Rd, Zhongli City, Taoyuan  
320 Taiwan, TEL: 886 3 419 2099,  
FAX: 886 3 419 2377,  
[patrick.wang@prolightopto.com](mailto:patrick.wang@prolightopto.com),  
[www.prolightopto.com](http://www.prolightopto.com)

Manufactures high-power LEDs with invention package patents granted mainly from the US, Taiwan and China. Dedicated to the research, development, and manufacturing of mid- and high-power with high reliability LEDs. Has a series of products including 0.3, 0.5, 1, 3, 4, 5, 10, 15W and more. All of its LEDs meet JEDEC MSL 2a criteria and are suitable for lead-free IR re-flow process.

**Promus Co Ltd**Shanghai, China, [www.promuscorp.com](http://www.promuscorp.com)**ProPhotonix Ltd**Salem, NH, USA, [www.prophotonix.com](http://www.prophotonix.com)**Protect-R-Shield**Salisbury, NC, USA, [www.protectrshield.com](http://www.protectrshield.com)**ProTerra LED Inc**Brantford, ON, Canada, [www.proterraled.com](http://www.proterraled.com)**proto labs®**  
Real Parts. Really Fast.™**Proto Labs Inc**5540 Pioneer Creek Dr, Maple Plain,  
MN 55359 USA, TEL: 1 877 479 3680,  
FAX: 1 763 479 2679,  
[customerservice@protolabs.com](mailto:customerservice@protolabs.com),  
[www.protolabs.com](http://www.protolabs.com)

## ■ See ad on page 37

Utilizes proprietary computing technologies and automated manufacturing systems to provide prototype parts and shortrun production services. Through its Firstcut CNC machining and Protomold injection molding services, all parts are made by standard production methods, delivered at affordable prices, and can be delivered in as fast as one day.

**PTH Group**Via Ticino 15, Castiglione Olona, Varese  
21043 Italy, TEL: 39 0331 858378,  
FAX: 39 0331 824390, [info@pth-group.com](mailto:info@pth-group.com),  
[www.pth-group.com](http://www.pth-group.com)

Specializes in the production of LED plastic profiles, diffusers and tubes. LED profiles, diffusers and tubes are available in polycarbonate and acrylic transparent, opal and satin UV resistant material and on request with flame retardant material. Technical features include high light transmission and excellent diffusion.

**Puritan Plastics Inc**

Kitchener, ON, Canada, 1 519 501 1094

**Putian International Co**

Avondale, AZ, USA, 1 602 410 0825

**Quasar Light Co Ltd**Shenzhen, Guangdong, China,  
[www.quasarled.com](http://www.quasarled.com)**Rachamalla Lighting Solutions Pvt Ltd**Bangalore, Karnataka, India,  
[www.rachamallaighting.co.in](http://www.rachamallaighting.co.in)**Radco Infusion Technologies LLC**Toledo, OH, USA, [www.radcoindustries.com](http://www.radcoindustries.com)**Raled LLC**Winter Springs, FL, USA, [www.raled.com](http://www.raled.com)**Ramp Plus Technologies Pvt Ltd**Bangalore, Karnataka, India,  
[www.rampplus.com](http://www.rampplus.com)**Rayconn Electronics Co Ltd**Shenzhen, China, [www.rayconn.net](http://www.rayconn.net)**Reach Technology Inc**Fremont, CA, USA, [www.reachtech.com](http://www.reachtech.com)**REAL images**Ahmedabad, Gujarat, India,  
[www.realimagedigital.com](http://www.realimagedigital.com)

**RECOM Power Inc**

18 Bridge St, Unit 4C, Brooklyn, NY  
11201 USA, TEL: 1 718 855 9710,  
FAX: 1 718 855 9714,  
admin@recom-power.com,  
www.recom-power.com

## ■ See ad on page 49

Serves the electronics industry for over 34 years, offering constant current high-power LED-drivers, DC/DC converters, switching regulators and single, dual, and triple output AC/DC converters as standard catalogue products for fast delivery. The principle markets are in the performance oriented lighting, industrial control, data processing, telecommunications, transportation (including avionics), medical industries, military and test equipment although the converters are used in virtually every industry requiring low-to-medium DC voltage conversion in the 0.25–60W range.

**RedBird LED**

Atlanta, GA, USA, [www.redbirdled.com](http://www.redbirdled.com)

**Regal Lighting Designs**

Georgetown, ON, Canada,  
[www.regallightingdesigns.com](http://www.regallightingdesigns.com)

**Relte Lighting (TaiCang) Co Ltd**

TaiCang, Jiangsu, China, [www.led-relte.com](http://www.led-relte.com)

**Remtec Inc**

Norwood, MA, USA, [www.remtec.com](http://www.remtec.com)

**Renco Electronics**

Rockledge, FL, USA, [www.rencousa.com](http://www.rencousa.com)

**Renew Science Inc**

Appleton, WI, USA, [www.renewscience.com](http://www.renewscience.com)

**RenovaSolar Lda**

Lisboa, Portugal, [www.renovasolar.pt](http://www.renovasolar.pt)

**Retop LED Display Co Ltd**

Shenzhen, Guangdong, China,  
[www.szretop.com](http://www.szretop.com)

**RGB Lights**

Lincolnwood, IL, USA, [www.rgblights.com](http://www.rgblights.com)

**Richtek Corp**

San Jose, CA, USA, [www.richtek.com](http://www.richtek.com)

## RIFF COMPANY, Inc.

**Riff Co Inc**

1484 Highland Ave, Cheshire, CT 06410  
USA, TEL: 1 203 272 4899,  
FAX: 1 203 250 7389,  
micro-drilling@riff-co.com,  
[www.riff-co.com](http://www.riff-co.com)

## ■ See ad on page 44

Provides burr-free micro-drilling to meet the most demanding requirements. Also offers vertical machining and surface grinding. All drilling, machining, and inspection is performed under climate-controlled conditions.

**Rincker Productions**

Den Haag, China, [www.ledstart.com](http://www.ledstart.com)

## ROAL living energy

**ROAL Electronics SpA**

via Jesina, 56/a, Castelfidardo, Ancona  
60022 Italy, TEL: 39 071 721461,  
FAX: 39 071 72146480,  
info@roallivingenergy.com,  
[www.roallivingenergy.com](http://www.roallivingenergy.com)

## ■ See ad on page 46

Is an innovations company with a significant intellectual property and products portfolio in digital power control and solid-state lighting (LED) electronics. The technology focus includes switch mode power supplies, LED drivers, HB LED modules, DSP controls, DMX control interface, motor controls and thermal design. Choose from hundreds of "fixture ready products" with the highest efficiencies and smallest packages in the industry. Interactive product search tool available on the new website.

**Robertson Worldwide**

Blue Island, IL, USA, [www.robertsonww.com](http://www.robertsonww.com)

**ROHM Semiconductor USA LLC**

San Diego, CA, USA, [www.rohm.com/us](http://www.rohm.com/us)

**Rosco Laboratories Inc**

Stamford, CT, USA, [www.rosco.com](http://www.rosco.com)

**RSoft Design Group**

Ossining, NY, USA, [www.rsoftdesign.com](http://www.rsoftdesign.com)

**RTP Co**

Winona, MN, USA, [www.rtpcompany.com](http://www.rtpcompany.com)

**Rudolph Brothers & Co**

Canal Winchester, OH, USA, [www.rudbro.com](http://www.rudbro.com)

**Rudolph Technologies Inc**

Flanders, NJ, USA, [www.rudolphtech.com](http://www.rudolphtech.com)

**Rui Meng Electronics Co Ltd**

Shenzhen, Guangdong, China,  
[www.rmledlights.com](http://www.rmledlights.com)

**Runion Energy Solutions LLC**

Inwood, WV, USA, [www.runionenergy.com](http://www.runionenergy.com)

**S2 Innovative Products Group Ltd**

Kelowna, BC, Canada, [www.s2ipg.com](http://www.s2ipg.com)

**S3J Electronics LLC**

Lancaster, NY, USA, [www.s3jelec.com](http://www.s3jelec.com)

**Sagitario Lighting SLU**

Barcelona, Spain, [www.sagitariolighting.com](http://www.sagitariolighting.com)

**Saint-Gobain Ceramic Materials**

Amherst, NY, USA, [www.bn.saint-gobain.com](http://www.bn.saint-gobain.com)

**SAKMA Electronica Industrial SA**

Barcelona, Catalonia, Spain, [www.sakma.com](http://www.sakma.com)

**Salient Pty Ltd**

Sydney, NSW, Australia, [www.salient.com.au](http://www.salient.com.au)

**San Antonio Landscaping**

San Antonio, TX, USA,  
[www.sanantoniolandscapingservices.com/irrigation.php](http://www.sanantoniolandscapingservices.com/irrigation.php)

**Sander Electronics**

Orangevale, CA, USA,  
[www.sanderelectronics.com](http://www.sanderelectronics.com)

**San Francisco Circuits**

San Mateo, CA, USA, [www.sfcircuits.com](http://www.sfcircuits.com)

**Saniltech Co Ltd**

Incheon, Korea, [www.saniltech.com](http://www.saniltech.com)

## sapa:

**Sapa Extrusions**

9600 Bryn Mawr Ave, Rosemont, IL  
60018 USA, TEL: 1 412 996 4872,  
stephen.jackson@sapagroup.com,  
[www.sapagroup.com](http://www.sapagroup.com)

Manufactures aluminum profiles and is a key supplier of thermal management solutions for LED applications, including heat sinks, enclosures and light poles. With manufacturing and fabrication capabilities at 16 plants across North America, and a North American technical center, the company works with customers to improve designs, helping to optimize the value of the products.

**SATHEA**

Prague 6, Czech Republic, [www.sathea.cz](http://www.sathea.cz)

**Savled/Diranet Oy**

Savonlinna, Finland, [www.candeeffect.com](http://www.candeeffect.com)

**SavWatt USA Inc**

Baltimore, MD, USA, [www.savwatt.com](http://www.savwatt.com)

**SAYCO**

Guadalajara, Jalisco, Mexico, [www.sayco.com](http://www.sayco.com)

**Scape Light Co Ltd**

Shenzhen, China, [www.scape-light.com](http://www.scape-light.com)

**SchahLED Lighting**

Munich, Germany, [www.schahled.de](http://www.schahled.de)

## company directory | SCHOTT NORTH AMERICA INC

**SCHOTT North America Inc**

Southbridge, MA, USA,  
[www.us.schott.com/lightingimaging](http://www.us.schott.com/lightingimaging)

**Science & Technology**

Gandhinagar, Gujarat, India,  
[www.scientechtechnology.com](http://www.scientechtechnology.com)

**Sealing Devices Inc**

Lancaster, NY, USA, [www.sealingdevices.com](http://www.sealingdevices.com)

**SECOL**

Bursa, Turkey, [www.secol.com.tr](http://www.secol.com.tr)

**Seesmart Inc**

Simi Valley, CA, USA, [www.seesmartled.com](http://www.seesmartled.com)

**Selectronic**

Witney, UK, [www.selectronic-uk.com](http://www.selectronic-uk.com)

**Selectron Inc**

Montreal, QC, Canada, [www.select-test.com](http://www.select-test.com)

**Semileds**

Chu-Nan, Miao-Li, Taiwan, [www.semileds.com](http://www.semileds.com)

**Semiprobe**

Winooski, VT, USA, [www.semiprobe.com](http://www.semiprobe.com)

**Senior Operations LLC Metal Bellows**

Sharon, MA, USA, [www.metalbellows.com](http://www.metalbellows.com)

**Senslite Corp**

Jhubei City, Hsinchu County, Taiwan,  
[www.senslite.com.tw](http://www.senslite.com.tw)

**Senso Lighting Inc**

Calgary, AB, Canada, [www.sensolighting.com](http://www.sensolighting.com)

**SEOL SEMICONDUCTOR****Seoul Semiconductor**

148-29, Gasan-dong, Geumcheon-gu,  
Seoul, Korea, TEL: 82 2 3281 6369,  
s1u0n0@acriche.com, [www.acriche.com](http://www.acriche.com)

## ■ See ad on front cover

Specializes in LED packaging and custom module manufacturing. Provides a full range of LED products including AC-driven semiconductor light sources, Acriche, high-brightness power, side view, top, chip, lamp and high flux LEDs, and custom type modules. Applications for LED products include general lighting, signage, back lighting for mobile phones, TVs, notebook computers, automotive lighting, home appliances, signals, and more.

**SEPCO - Solar Electric Power Co**

Stuart, FL, USA, [www.sepco-solarlighting.com](http://www.sepco-solarlighting.com)

**Shanghai BMT Automation**

Shanghai, China, [www.bmtsh.com](http://www.bmtsh.com)

**Shanghai Neolux LED Lightings Co Ltd**

Shanghai, China, [www.neoluxled.com](http://www.neoluxled.com)

**Shanghai Yaming-Lighting Co Ltd**

Shanghai/Jiading, China,  
[www.yaming-lighting.com](http://www.yaming-lighting.com)

**Shanxi Guangyu LED Lighting Co Ltd**

Shanxi Guangyu Industrial Gardern

Yaomiaodistrict, Linfen, Shanxi

041000 China, TEL: 86 10 62113630,

FAX: 86 10 62153948,

sales@gyledlight.com, [www.gyledlight.com](http://www.gyledlight.com)

Researches, produces, sells, installs and designs powerful LED light sources, LED indoor and outdoor lighting products, LED mining lighting products, and lithium batteries and packs. Established in 1985.

**Sharp Microelectronics Europe**

Sonninstrasse 3, Hamburg 20097 Germany,

TEL: 49 180 507 35 07, info.sme@sharp.eu,

[www.sharpleds.eu](http://www.sharpleds.eu)

## ■ See ad on page 87

Based on a modular design, the lighting LED portfolio comprises of around 150 LED components for lighting applications ranging from 3228 chip size LEDs with a luminosity of about 17 lm to high power LED modules of the MegaZENI series with up to 4770 lm at 50W. LEDs feature a light efficiency of up to 105 lm/W with high CRI values of up to 93 and a lifetime of 40,000 hours.

**Sheffield Plastics**

Sheffield, MA, USA, [www.sheffieldplastics.com](http://www.sheffieldplastics.com)

**Shenzhen Absen Industry Co Ltd**

Shenzhen, China, [www.szabsen.com](http://www.szabsen.com)

**Shenzhen Bang-Bell Electronics**

Bldg C, JinXiongDa Industrial Park, Huan'guan

S Rd, Guanlan Town, Bao'an, Shenzhen,

Guangdong 518110 China,

TEL: 86 755 2998 8988,

FAX: 86 755 2998 8616

jasonyang@bbed.com, [www.bbed.com](http://www.bbed.com)

## ■ See ad on page 111

Manufactures, supplies and exports LED street lights, street lamps, light bulbs, lights, traffic lights and traffic signals. Founded in 1998.

**Shenzhen Bliss Lighting Co Ltd**

Shenzhen, China, [www.bliss-led.com](http://www.bliss-led.com)

**Shenzhen Bright Lighting Technology**

Shenzhen, China, [www.bright-led-lighting.com](http://www.bright-led-lighting.com)

**Shenzhen Brightlux Lighting Technology Co Ltd**

Shenzhen, Guangdong, China,

[www.led-brightlux.com](http://www.led-brightlux.com)

**Shenzhen Chenze SSL Co Ltd**

Shenzhen, Guangdong, China,

[www.9981led.com](http://www.9981led.com)

**Shenzhen Chipower Technology Co Ltd**

Shenzhen, China, [www.chipower.net](http://www.chipower.net)

**Shenzhen Dicolor Optoelectronics Co Ltd**

Shenzhen, China, [www.dicolor.cn](http://www.dicolor.cn)

**Shenzhen Eastar Electronic Co Ltd**

Shenzhen, China, [www.eastarledlighting.com](http://www.eastarledlighting.com)

**Shenzhen Fujisunwah Electronic Technology Co Ltd**

Shenzhen, Guangdong, China,  
[www.fujisunwah.com](http://www.fujisunwah.com)

**Shenzhen Greeup Optoelectronic Co Ltd**

Shenzhen, Guangdong, China,  
[www.greeup-ledlights.com](http://www.greeup-ledlights.com)

**Shenzhen Hi-Semicon Electronics Co Ltd**

Shenzhen, Guangdong, China,  
[www.hisemicon.com](http://www.hisemicon.com)

**Shenzhen Hongxing Lighting Co Ltd**

Shenzhen, Guangdong, China,  
[www.highsong.com](http://www.highsong.com)

**Shenzhen Jiuzhou Optoelectronics**

Shenzhen, China, [www.jz-led.com](http://www.jz-led.com)

**Shenzhen Lamp Technology Co Ltd**

Shenzhen, China, [www.szlamp.net](http://www.szlamp.net)

**Shenzhen LCF Tec Co Ltd**

Shenzhen, China, [www.sz-lcf.com.cn](http://www.sz-lcf.com.cn)

**Shenzhen Leadertone Industry Co Ltd**

Shenzhen, Guangdong, China,  
[www.leadertlight.com.cn](http://www.leadertlight.com.cn)

**Shenzhen Ledia Lighting Co Ltd**

Shenzhen, China, [www.ledialighting.com](http://www.ledialighting.com)

**Shenzhen Longvo Technology Development Co Ltd**

Shenzhen, Guangdong, China, [www.longvo.hk](http://www.longvo.hk)

**Shenzhen MR Photoelectricity Co Ltd**

Shenzhen, Guangdong, China, [www.mrled.cn](http://www.mrled.cn)

**Shenzhen Only Optoelectronic Technology Co Ltd**

Shenzhen, Guangdong, China,  
[www.onlyled.com](http://www.onlyled.com)

**Shenzhen Refond Optoelectronics Co Ltd**

Shenzhen, China, [www.refond.com](http://www.refond.com)

**Shenzhen RSB Fullcolor Display-tech Co Ltd**

Shenzhen, Guangdong, China,  
[www.rsbledsign.com](http://www.rsbledsign.com)

**Shenzhen Spark Optoelectronics**

Shenzhen, China, [www.spark-oe.com](http://www.spark-oe.com)

**Shenzhen Top Technology Co Ltd**

Shenzhen, Guangdong, China,  
[www.ledtop168.com](http://www.ledtop168.com)

**Shenzhen Topvision Optoelectronic Technology Co Ltd**

Shenzhen, China, [www.tvdisplay.com](http://www.tvdisplay.com)

**Shenzhen Wonderful High Technology Co Ltd**

Shenzhen, China, [www.whtled.com](http://www.whtled.com)



## company directory | SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD

**Shenzhen Zhongtian Lighting Co Ltd**

Shenzhen, Guangdong, China,  
[www.ztlights.com](http://www.ztlights.com)

**ShinEtsu****Shin-Etsu Silicones of America**

1150 Damar Dr, Akron, OH 44305-1066  
USA, TEL: 1 330 630 9860,  
[ebishop@shinetsusilicones.com](mailto:ebishop@shinetsusilicones.com),  
[www.shinetsusilicones.com](http://www.shinetsusilicones.com)

## ■ See ad on page 25

Offers vast technical and capital resources to formulate solutions as a major supplier of silicone materials to North America's medical, automotive, electronics, aerospace, and manufacturing industries. The premium silicone compounds incorporate leading-edge technology, staff expertise, and value-added service; offering customers the highest levels of quality and consistency in specialty silicone materials. A US subsidiary of Shin-Etsu Chemical Co Ltd, Japan.

**Shree Ram Electronics**

Ahmedabad, Gujarat, India,  
[www.shreeramindia.com](http://www.shreeramindia.com)

**Sielement LED Lights**

Shenzhen, Guangdong, China,  
[www.sielement.com](http://www.sielement.com)

**Signal Transformer Co**

Inwood, NY, USA, [www.signaltransformer.com](http://www.signaltransformer.com)

**Signcomplex Ltd**

3-4/F, Bldg C, Chuangfu Science & Technology Pk, Beihuan Rd, Shiyan Town, Bao'an District, Shenzhen 518108 China,  
TEL: 86 755 2760 8650,  
FAX: 86 755 2760 8651,  
[info@signcomplex.com](mailto:info@signcomplex.com),  
[www.signcomplex.com](http://www.signcomplex.com)

## ■ See ad on page 75

Manufactures LED lighting products in China. As an ISO9001:2000 certified company, it has products CE approved and RoHs compliant. Has become the biggest supplier of LED strip lighting. Also provides a diversified range of products to service architectural, commercial and home lightings.

**SiliconCore Technology**

Milpitas, CA, USA, [www.silicon-core.com](http://www.silicon-core.com)

**Silvermere Group**

St Paul, MN, USA,  
[www.silvermereinternational.com](http://www.silvermereinternational.com)

**Silver Star**

Guangzhou, China, [www.yagang.com](http://www.yagang.com)

**SinkPAD Corp**

950 Fee Ana St, Unit A, Placentia, CA  
92870 USA, TEL: 1 714 660 2944,  
[enquiry@sinkpad.com](mailto:enquiry@sinkpad.com), [www.sinkpad.com](http://www.sinkpad.com)

Provides the SinkPAD, the thermal management PCB technology which conducts heat out of a LED and into the atmosphere in a faster and more efficient manner. Unlike aluminium MCPB, SinkPAD technology provides a direct thermal path from LED to a heatsink. It is most effective in high-power surface mount LED applications.

**Smartgreen Technology Co Ltd**

Shenzhen, China, [www.smtgreen.com](http://www.smtgreen.com)

**Smart Technologies Electronics Ltd**

Shenzhen, China, [www.smartledlamp.com](http://www.smartledlamp.com)

**Smitties Lights and Sirens**

Kimberley, South Africa,  
[www.smitties-emergency.webs.com](http://www.smitties-emergency.webs.com)

**Solais Lighting Inc**

Stamford, NY, USA, [www.solais.com](http://www.solais.com)

**SolarOne Sololutions Inc**

Needham, MA, USA, [www.solarone.net](http://www.solarone.net)

**Solas Lights for Life Ltd**

Kilmarnock, Scotland, UK,  
[www.led-solutions.co.uk](http://www.led-solutions.co.uk)

**SolidApollo**

Lynnwood, WA, USA, [www.solidapollo.com](http://www.solidapollo.com)

**Solid State LED Lighting**

Shenzhen, China,  
[www.solidstateledlighting.com](http://www.solidstateledlighting.com)

**Solid State Luminaires**

St Charles, IL, USA,  
[www.solidstateluminaires.com](http://www.solidstateluminaires.com)

**Solmadis Inc**

Candiac, QC, Canada, [www.solmadis.com](http://www.solmadis.com)

**SoundOff Signal**

Hudsonville, MI, USA, [www.soundoffsignal.com](http://www.soundoffsignal.com)

**Spark LED Lighting (HK) Co Ltd**

Kowloon, Hong Kong,  
[www.sparkledlighting.com](http://www.sparkledlighting.com)

**Sparkle Power Inc**

San Jose, CA, USA, [www.sparklepower.com](http://www.sparklepower.com)

**Specialty Coating Systems**

Indianapolis, IN, USA, [www.scscoatings.com](http://www.scscoatings.com)

**Spectral LV Lighting Systems**

Newmarket, ON, Canada, [www.spectrally.ca](http://www.spectrally.ca)

**Spectrum Illumination**

Montague, MI, USA,  
[www.spectrumillumination.com](http://www.spectrumillumination.com)

**Sperger Handels GmbH**

Taufkirchen, Munich, Germany,  
[www.sperger-handel.eu](http://www.sperger-handel.eu)

**Spring City Electrical Manufacturing**

Spring City, PA, USA, [www.springcity.com](http://www.springcity.com)

**SSLI Ltd**

Cardiff, UK, [www.ssli.com](http://www.ssli.com)

**Stanley Electric Co Ltd**

Tokyo, Japan,  
[www.stanley-components.com/en](http://www.stanley-components.com/en)

**Stanley Electric Co Ltd (UK)**

Bracknell, Berks, UK,  
[www.stanley-components.com](http://www.stanley-components.com)

**Starled Inc**

Carson, CA, USA, [www.starled.com](http://www.starled.com)

**Stellaray Technology Ltd**

Shenzhen, Guangdong, China, [www.sr-leds.com](http://www.sr-leds.com)

**StellarNet Inc**

Tampa, FL, USA, [www.stellarnet.us](http://www.stellarnet.us)

**STMicroelectronics Inc**

Burlington, MA, USA, [www.st.com](http://www.st.com)

**Stouch Lighting**

Aston, PA, USA, [www.stouchlighting.com](http://www.stouchlighting.com)

**Strataplex Inc**

Tucson, AZ, USA, [www.strataplexinc.com](http://www.strataplexinc.com)

**STR Group Ltd**

St Petersburg, Russian Federation,  
[www.str-soft.com](http://www.str-soft.com)

**Suncolor Corp**

North Canton, OH, USA, [www.suncolorcorp.com](http://www.suncolorcorp.com)

**Sunenergy1**

Mooresville, NC, USA, [www.sunenergy1.com](http://www.sunenergy1.com)

**SunLED Corp**

Walnut, CA, USA, [www.sunledusa.com](http://www.sunledusa.com)

**Sunlite411 Inc**

El Monte, CA, USA, [www.sunlite411.com](http://www.sunlite411.com)

**Sunna Energy Pvt Ltd**

Auroville, Tamil Nadu, India, [www.sunna.in](http://www.sunna.in)

**SUNON®**

Sunonwealth Electric Machine Industry Co Ltd  
No 30, Ln 296, Xinya Rd, Qianzhen Dist,  
Kaohsiung City 806 Taiwan,  
TEL: 886 7 8135888, FAX: 886 7 8230505,  
[sunon@email.sunon.com.tw](mailto:sunon@email.sunon.com.tw), [www.sunon.com](http://www.sunon.com)

## ■ See ad on page 1

Provides total thermal solutions, specializing in developing innovative cooling technologies for LED lighting. Helps LED bulbs become more brilliant, energy-saving, and compact with a longer lifespan in very limited space, as well as cools down the temperature of the power supply. Has more than 30 years experience in high-efficient cooling.

## company directory | SUNPOWER TECHNOLOGY LLP

**Sunpower Technology LLP**

Aldermaston, Berkshire, UK,  
[www.sunpower-uk.com](http://www.sunpower-uk.com)

**Sunsify International**

Santa Clara, CA, USA, [www.sunsify.com](http://www.sunsify.com)

**Super Service System**

Ahmedabad, Gujarat, India

**Supreme Electroplast Industries**

Mumbai, India, [www.supshitl.com](http://www.supshitl.com)

**Surface Mount Techniques SMT**

Huntington Beach, CA, USA,  
[www.smtprinters.com](http://www.smtprinters.com)

**SUSS MicroTec**

Garching, Germany, [www.suss.com](http://www.suss.com)

**Svetel LLC**

St Petersburg, Russian Federation,  
[www.svetled.org](http://www.svetled.org)

**Switch Lighting**

Nelson, New Zealand,  
[www.switch-lighting.co.nz](http://www.switch-lighting.co.nz)

**Sycamore Glass Components**

Sycamore, IL, USA, [www.sycamore-glass.com](http://www.sycamore-glass.com)

**Synapse Wireless Inc**

Huntsville, AL, USA,  
[www.synapse-wireless.com](http://www.synapse-wireless.com)

**SYNOPSYS®****Synopsys Inc**

3280 E Foothill Blvd, Suite 300, Pasadena,  
CA 91107-3188 USA, TEL: 1 626 795 9101,  
FAX: 1 626 795 9102, [info@opticalres.com](mailto:info@opticalres.com),  
[www.opticalres.com](http://www.opticalres.com)

Develops optical design software, with CODE V for imaging design, and LightTools for illumination design. CODE V has state-of-the-art capabilities for lens optimization, analysis, tolerancing, beam propagation, and coupling efficiency. LightTools features virtual prototyping, simulation, optimization, and photorealistic renderings of illumination applications, including LED die packaging and LED-driven illumination systems. The engineering services team has successfully completed over 4800 design projects for government, commercial, and consumer products, including illumination applications.

**Taconic Advanced Dielectric Division**

Mullingar, Co Westmeath, Ireland,  
[www.taconic-add.com](http://www.taconic-add.com)

**Taiwan Oasis Technology Co Ltd**

Taipei City, Taiwan, 886 2 2706 6258

**Tally Display Corp**

Clifton, NJ, USA, [www.tallydisplay.com](http://www.tallydisplay.com)

**Talon Aerospace**

Helena, AL, USA, [www.talonaerospace.com](http://www.talonaerospace.com)

**TAOS Inc**

Plano, TX, USA, [www.taosinc.com](http://www.taosinc.com)

**Tasca**

Germantown, WI, 53022, USA,  
[www.tascalight.com](http://www.tascalight.com)

**TDK Corp**

Lincolnshire, IL, USA, [www.tdk.com](http://www.tdk.com)

**TEAM Instruments Co Ltd**

Kaohsiung, Taiwan, [www.team-meter.com.tw](http://www.team-meter.com.tw)

**Tecartex Digital Solutions SL**

Badajoz, Extremadura, Spain,  
[www.tecartex.com](http://www.tecartex.com)

**Telops Inc**

St-Jean Baptiste, QC, Canada, [www.telops.com](http://www.telops.com)

**Tempo Industries**

1961 McGaw Ave, Irvine, CA 92614 USA,  
TEL: 1 949 442 1601, FAX: 1 949 442 1609,  
[info@tempoindustries.com](mailto:info@tempoindustries.com),  
[www.tempoindustries.com](http://www.tempoindustries.com)

Provides pedestrian safety lighting systems in cinemas, theaters and entertainment arenas. The newest addition to the commercial lighting market is the award-winning Series 6000 high-power LED articulated cove and soffit lighting system. Founded in 1986.

**Tepcomp Oy**

Turku, Finland, [www.tepcomp.fi](http://www.tepcomp.fi)

**TerraLUX Inc**

Longmont, CO, USA,  
[www.terraluxillumination.com](http://www.terraluxillumination.com)

**Texas Instruments**

12500 TI Blvd, Dallas, TX 75243 USA,  
TEL: 1 214 480 1920, FAX: 1 214 480 6662,  
[www.ti.com/led](http://www.ti.com/led)

Provides high-performance LED lighting design ICs. From RF and power management (including AC/DC, power factor correction, DC/DC and linear power conversion) to real-time controls and ultra-low-power MCUs, incorporating LED Driver IC solutions can help differentiate LED lighting designs. In addition, The company's local support and applications expertise can help LED IC-based products get to market faster. Download the LED Reference Design Cookbook online.

**ThermoKing Technology Int'l Corp**

Wugu Township, Taipei, Taiwan,  
[www.ttic-tech.com.tw](http://www.ttic-tech.com.tw)

**Thermal Solution Resources LLC**

Narrabansett, RI, USA, [www.thermsource.com](http://www.thermsource.com)

**Thinkwise Lighting**

Melbourne, VIC, Australia,  
[www.thinkwise.com.au](http://www.thinkwise.com.au)

**Thomas Research Products**

11548 Smith Dr, Huntley, IL 60142 USA,  
TEL: 1 847 515 3057, FAX: 1 847 515 3047,  
[glenn@thomasresearchproducts.com](mailto:glenn@thomasresearchproducts.com),  
[www.thomasresearchproducts.com](http://www.thomasresearchproducts.com)

■ See ad on page 51

Supplies LED drivers and has a comprehensive range of long-life constant current, constant voltage, 0-10V dimmable, and line-voltage dimmable drivers. Detailed specification sheets are online. Also has the ability to quickly design and deliver custom LED drivers for specific requirements. Every design is optimized for quality and longevity.

**Three Five Compounds Inc**

New York, NY, USA, [www.iii-vcompounds.com](http://www.iii-vcompounds.com)

**Ticona Engineering Polymers**

8040 Dixie Hwy, Florence, KY 41042 USA,  
TEL: 1 800 833 4882, FAX: 1 859 372 3125,  
[prodinfo@ticona.com](mailto:prodinfo@ticona.com), [www.ticona.com](http://www.ticona.com)

Offers high-performance engineering polymers in high-brightness LED lighting and backlighting applications. Primary products include Vectra/ Zenite LCP and Thermx PCT. Provides global technical services with experts in design, analytical and molding to help customers make optimum use of polymers.

**TNT Plastic Molding Inc**

Anaheim, CA, USA, [www.tntplasticmolding.com](http://www.tntplasticmolding.com)

**Tokistar Lighting Inc**

Anaheim, CA, USA, [www.tokistar.com](http://www.tokistar.com)

**Tomasko & Associates**

Seymour, CT, USA,  
[www.tomaskoandassociates.com](http://www.tomaskoandassociates.com)



Top Energy Saving System Corp.

**Top Energy Saving System Corp (TESS)**  
3F, No 115, Wugong 3rd Rd, Wugu  
District, New Taipei City 248  
Taiwan, TEL: 886 2 22997688,  
FAX: 886 2 22997568, [inquiry@tesscop.com](mailto:inquiry@tesscop.com),  
[www.tesscop.com](http://www.tesscop.com)

Holds over 60 patents distributed in EU, US, JP, CN, and TW and provides innovative and speedy R&D capability. Provides the high quality and high lumen-output LED lighting equipment that can compete in international markets ranging from LED bulb, LED down light, spot light and lighting series with 4 to 20W for assorted application, which replace incandescent bulb from 25 to 120W.

**TOP LED Ltd**

Shenzhen, Guangdong, China,  
[www.top-led-light.com](http://www.top-led-light.com)

**T-Opto, Toyota Tsusho America**

New York, NY, USA, [www.t-opto.com](http://www.t-opto.com)

**Toshiba International Corp**

Houston, TX, USA, [www.toshiba.com/lighting](http://www.toshiba.com/lighting)

**Toshiba Corp New Lighting Systems Div**

Tokyo, Japan, [www.toshiba.co.jp/lighting](http://www.toshiba.co.jp/lighting)

## TOSHIBA

### Leading Innovation >>>

**Toshiba Electronics Europe**  
Hansaallee 181, Dusseldorf 40549  
Germany, TEL: 49 211 5296 0,  
[info@toshiba-components.com](mailto:info@toshiba-components.com),  
[www.toshiba-components.com](http://www.toshiba-components.com)

■ See ad on page 64

Manufactures optoelectronic components. LEDs are available in a wide SMD package line-up. All colors can be served with highest luminosity and highest reliability for applications from automotive and LCD backlighting to general lighting. Latest products are very powerful white and warm white LEDs with an efficacy of 120 lm/W.

**Towa Corp**

Kyoto, Japan, [www.towajapan.co.jp](http://www.towajapan.co.jp)

**TPL Vision**

La Chevroliere, France, [www.tpl-vision.net](http://www.tpl-vision.net)

**Traxon Technologies Ltd**

East Rutherford, NJ, USA,  
[www.traxontechnologies.com](http://www.traxontechnologies.com)

**Tridonic**

Dornbirn, Austria, [www.tridonic.com](http://www.tridonic.com)

**Trilux LED Lighting Industry Corp**

Shenzhen, Guangdong, China,  
[www.trilux-led.com](http://www.trilux-led.com)

**Trion Technology**

Clearwater, FL, USA, [www.triontech.com](http://www.triontech.com)

**Tri-State LED**

Greenwich, CT, USA, [www.tristateled.com](http://www.tristateled.com)

**TT electronics Optoelectronic Business Unit**

Carrollton, TX, USA, [www.optekinc.com](http://www.optekinc.com)

**TÜV SÜD America Inc**

Alpharetta, GA, USA, [www.tuvamerica.com](http://www.tuvamerica.com)

**TÜV SÜD America Inc**

Peabody, MA, USA, [www.tuvamerica.com](http://www.tuvamerica.com)

**Twin Hill Co Ltd**

Taipei City, Taiwan, [www.twinhill.cc](http://www.twinhill.cc)

**UBLeds Co Ltd**

New Taipei City, Taipei, Taiwan,  
[www.ubleds.com.tw](http://www.ubleds.com.tw)

**UK Optical Plastics Ltd**

Leicester, Leicestershire, UK,  
[www.ukopticalplastics.com](http://www.ukopticalplastics.com)



**UL - Underwriters Laboratories Inc**  
333 Pfingsten Rd, Northbrook, IL  
60062 USA, TEL: 1 877 854 3577,  
[lumen.insights@us.ul.com](mailto:lumen.insights@us.ul.com),  
[www.ul.com/lighting](http://www.ul.com/lighting)

■ See ad on page 98

Provides product safety testing and certification for over 110 years. The UL mark is the most recognized and trusted symbol of safety in the world. UL is an architect of the US safety system, having developed more than 850 product standards, and actively participating in national and international standards development. Tests more than 19,000 types of products, and 20 billion UL marks appear in the marketplace each year. Consumers and regulatory authorities value UL as a leader on safety issues. With public safety at the heart of the mission, it acts as a safety resource and advocate. The organization works closely with customers, regulators, insurers, retailers and consumers on research, technology and safety initiatives. It promotes public safety through education and outreach, including through and to the media. Working with more than 71,000 customers in 96 countries, the company helps enhance safety and quality on a global scale. From 62 laboratories, testing and certification facilities worldwide, it is working for a safer world. Has a special standard for LED lighting which will facilitate the North American market access of products.

**UNI-EE Electric Appliance Co Ltd**

Guangzhou, China, [www.uni-ee.com](http://www.uni-ee.com)

**Uniled Technologies (FZC)**

Sharjah, United Arab Emirates, [www.uniled.co](http://www.uniled.co)

**Unilumin Group Co Ltd**

Shenzhen, China, [www.unilumin.com](http://www.unilumin.com)

**Unity-Advance Electronics Co Ltd**

Shenzhen, China, [www.uapcb.com](http://www.uapcb.com)

**UPEC Electronics Corp**

Taipei, Taiwan, [www.u-pec.com](http://www.u-pec.com)

**Upstream Engineering Inc**

Oulu, Finland, [www.upstream.fi](http://www.upstream.fi)

**Urban Solar Corp**

Victoria, BC, Canada, [www.urbansolarcorp.com](http://www.urbansolarcorp.com)

**US Eco-Light**

Prattville, AL, USA, [usecolight.com](http://usecolight.com)

**USHIO America**

5440 Cerritos Ave, Cypress, CA 90630 USA,  
TEL: 1 800 838 7446, [www.ushio.com](http://www.ushio.com)

Develops solid-state lighting solutions for a variety of general lighting and specialty lighting applications. Offers LED replacement lamps for decorative and display lighting, LED systems for architectural, entertainment, medical and sign lighting applications as well as solid state lasers for projection and fiber-optic systems.

**usLEDsupply**

Mercer, PA, USA, [www.usledsupply.com](http://www.usledsupply.com)

**Vanguard Energy Solutions**

Sheffield Village, OH, USA,  
[www.vanguardenergysolution.com](http://www.vanguardenergysolution.com)

**VAOPTO**

Las Vegas, NV, USA, [www.vaopto.com](http://www.vaopto.com)

**VAT**

Woburn, MA, USA, [www.vatvalve.com](http://www.vatvalve.com)

**Veeco Instruments Inc**

1 Terminal Dr, Plainview, NY 11803 USA,  
TEL: 1 516 677 0200, FAX: 1 516 714 1231,  
[sales@veeco.com](mailto:sales@veeco.com), [www.veeco.com](http://www.veeco.com)

Offers high brightness light emitting diodes (HB LEDs). Manufacturers with the unique technology, in-depth support and industry-leading innovation needed to meet the surging demand for backlighting, general illumination, automotive and other lighting applications, and more.

## company directory | VEKTREX

**Vektrex**San Diego, CA, USA, [www.vektrex.com](http://www.vektrex.com)**Ventec USA**Ward Hill, MA, USA, [www.ventec-usa.com](http://www.ventec-usa.com)**Verbatim Americas LLC**1200 W WT Harris Blvd, Charlotte, NC 28262  
USA, [www.verbatimlighting.com](http://www.verbatimlighting.com)

Offers high-quality solid state lighting products that offer energy savings and provide excellent light quality.

**Verbatim GmbH**Eschborn, Germany, [www.verbatimled.eu](http://www.verbatimled.eu)**Vexica Technology Ltd**Leeds, West Yorkshire, UK, [www.vexica.com](http://www.vexica.com)**Via Expo**Plovdiv, Bulgaria, [www.viaexpo.com](http://www.viaexpo.com)**Vigilant Technology Co Ltd**Lamplatiw, Ladkrabang, Bangkok, Thailand,  
[www.vigilant-techno.com](http://www.vigilant-techno.com)**Visionaire Lighting**Rancho Dominguez, CA, USA,  
[www.visionairelighting.com](http://www.visionairelighting.com)**Visual Dimensions NA Inc**Irvine, CA, USA, [www.visual-dna.com](http://www.visual-dna.com)**Visual Interactive Ltd**Cannock, Staffs, UK,  
[www.visualinteractive.co.uk](http://www.visualinteractive.co.uk)**viviLED Display Co**Laguna Hills, CA, USA, [www.viviled.com](http://www.viviled.com)**Vvview Optoelectronic Technology Co Ltd**Bao'an district, Shenzhen, China,  
[www.led-video-screens.com](http://www.led-video-screens.com)**Wakefield Solutions**Pelham, NH, USA, [www.wakefield.com](http://www.wakefield.com)**Wall Industries Inc**Exeter, NH, USA, [www.wallindustries.com](http://www.wallindustries.com)**Wamco Inc**Fountain Valley, CA, USA, [www.wamcoinc.com](http://www.wamcoinc.com)**Watt Works Inc**Columbus, OH, USA, [www.wattworks.com](http://www.wattworks.com)**Wavelength Electronics Inc**Bozeman, MT, USA, [www.teamwavelength.com](http://www.teamwavelength.com)**Wei Min Industrial Co Ltd**Taichung Hsien, Taiwan, [www.weimin.com.tw](http://www.weimin.com.tw)**WELLS-CTI**Phoenix, AZ, USA, [www.wellscti.com](http://www.wellscti.com)**Wellypower Optronics Co**Hsinchu, Taiwan, [www.wellypower.com](http://www.wellypower.com)**Wessel LED Lighting Systems**Davie, FL, USA, [www.led-lighting-systems.net](http://www.led-lighting-systems.net)**West Bank Engineering Consultancy Ltd**Doncaster, South Yorks, UK, [www.wbecltd.com](http://www.wbecltd.com)**Westboro Photonics**Ottawa, ON, Canada, [www.wphotonics.com](http://www.wphotonics.com)**WhiteOptics**New Castle, DE, USA, [www.whiteoptics.com](http://www.whiteoptics.com)**Wilbrecht Ledco Inc**St Paul, MN, USA, [www.wilbrechtledco.com](http://www.wilbrechtledco.com)**Wilger Liaison Co Inc**

Sarasota, FL, USA, 1 941 925 2049

**Wilger Testing Co Inc**5654 Sarah Ave, Sarasota, FL 34233 USA,  
TEL: 1 941 925 2049, FAX: 1 941 925 5964,  
[inquiries@wilgertesting.com](mailto:inquiries@wilgertesting.com),  
[www.productsafetytesting.com](http://www.productsafetytesting.com)

Operates as a ISO17025 accredited testing laboratory to UL/ANSI standards in lighting. With 31 year's service, makes product safety fast, thorough, and accurate. Expertise is unmatched with members of ANSI Lighting Standard forming committees as part of the service. No obligation quotes available.

**Wilson Process Systems**Hastings, East Sussex, UK, [www.wps.co.uk](http://www.wps.co.uk)**WiseLED**Gilleleje, Denmark, [www.wiseled.com](http://www.wiseled.com)**World of Lights LED Solutions Inc**Burlington, ON, Canada, [www.ledsolutions.ca](http://www.ledsolutions.ca)**WT&T Inc**Pierrefonds, QC, Canada,  
[www.wttechnology.com](http://www.wttechnology.com)**Wurth Electronics Midcom Inc**Watertown, SD, USA,  
[www.we-online.com/midcom](http://www.we-online.com/midcom)**Wuxi Kinlight Optoelec Technology**Wuxi, China, [www.ledkl.com](http://www.ledkl.com)**X Design Led Lighting**Dublin 11, Ireland, [www.xdesign.ie](http://www.xdesign.ie)**Xiamen Xing Henglong Lighting Technology Co Ltd**Xiamen, Fujian, China, [www.xinghenglong.com](http://www.xinghenglong.com)**Xicato Inc**San Jose, CA, USA, [www.xicato.com](http://www.xicato.com)**Xing Henglong Lighting Technology Co Ltd**Xiamen, Fujian, China, [www.xinghenglong.com](http://www.xinghenglong.com)**YEG Opto**High Wycombe, Buckinghamshire, UK,  
[www.yegopto.co.uk](http://www.yegopto.co.uk)**Yireh Infotech Pvt Ltd**

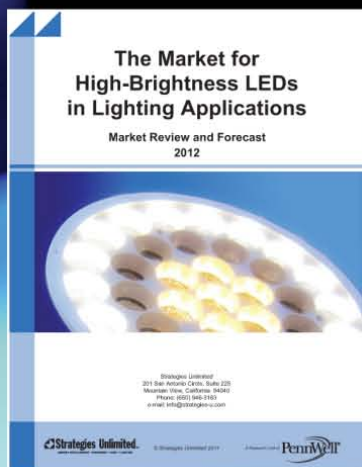
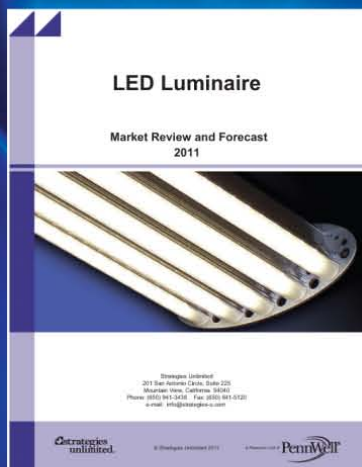
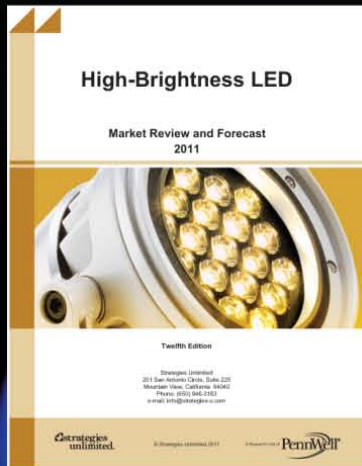
New Delhi, India, 91 95 6018 3033

**YUYANG DNU Co Ltd**488-1 Yuram-Ri, Paltan-Myeon,  
Hwaseong-Si, Gyenggi-Do 445-913 Korea,  
TEL: 8231 350 7400, FAX: 8231 352 8997,  
[yuyang@yuyang.co.kr](mailto:yuyang@yuyang.co.kr), [www.yuyang.co.kr/eng](http://www.yuyang.co.kr/eng)  
■ See ad on page 4

Develops quality products in digital display, LED solutions, IT, and renewable energy. It is the company principle to carry out customer orientation on the basis of trust and sincerity with experience and innovative technology.

**YYZ Systems Inc**Mississauga, ON, Canada,  
[www.yyzsystems.com](http://www.yyzsystems.com)**ZC&R Coatings for Optics**Torrance, CA, USA, [www.zcrcoatings.com](http://www.zcrcoatings.com)**ZEISST GmbH**Munich, Germany, [www.zeisst.com](http://www.zeisst.com)**ZEMAX Development Corp**Bellevue, WA, USA, [www.zemax.com](http://www.zemax.com)**Zetamar Elektronik Tic Ltd Sti**Istanbul, Turkey, [www.zetamar.com](http://www.zetamar.com)**Zhejiang Jinzhong Machinery & Electronic Technology Co Ltd**Jiaxing, ZheJiang, China, [www.jxjinzhong.com](http://www.jxjinzhong.com)**Zuhai Mingyuan Lighting Co Ltd**Zuhai, Guangdong, China, [www.ecled.com](http://www.ecled.com)**Zuhai Shengchang Electronics Co Ltd**Guangdong, China, [www.scpower.net.cn](http://www.scpower.net.cn)**Zierick Manufacturing Corp**Mount Kisco, NY, USA, [www.zierick.com](http://www.zierick.com)**ZMDI - Zentrum Mikroelektronik Dresden**Dresden, Germany, [www.zmdi.com](http://www.zmdi.com)**Zydoled**La Puebla de Alfinden, Zaragoza, Spain,  
[www.zydoled.com](http://www.zydoled.com)

# New Market Reviews and Forecasts Available Now!



**NEW!**  
Order today

**Strategies Unlimited has been researching the LED market continuously since 1994. Find out more about our complete market reports on the overall LED market, LEDs for lighting, and LED lighting fixtures and more!**

**Market analysis and forecast reports include:**

- **High-Brightness LEDs**
- **LED Outdoor Area and Street Lighting**
- **LED Driver ICs**
- **LED Luminaires**
- **China Upstream LED Market**

**...and more!**

**For more information contact  
Tim Carli at: +1 (650) 946 3163,  
or email Tim at: [tcarli@strategies-u.com](mailto:tcarli@strategies-u.com)**

**Visit online at [www.strategies-u.com](http://www.strategies-u.com)**

**Strategies Unlimited™**

MARKET INTELLIGENCE  
PHOTONICS • LEDs • LIGHTING

**LEDs & Lighting Media Group**

**Strategies Unlimited™**  
MARKET INTELLIGENCE  
PHOTONICS • LEDs • LIGHTING

**Strategies in Light™**  
USA • EUROPE • JAPAN • CHINA

**THE LED SHOW™**

**PennWell®**

## Product Index | LED SUPPLIERS DIRECTORY

|   |   |  |
|---|---|--|
| AC LEDs..... 7  | Floodlights, wall-washers, battens ..... 92               | Packaging & assembly equipment..... 38                         |
| AlGaInP red, orange, yellow LED chips ..... 16                  | High resolution indoor video screens..... 100             | Panels/tiles with LED backlighting..... 95                     |
| Alphanumeric displays, tickers,<br>scoreboards ..... 99         | Indoor: color-controlled luminaires ..... 68              | PCBs..... 38   |
| Aluminum casings ..... 31                                       | Indoor: desk/task lighting..... 68                        | Phosphors & quantum dots..... 38                               |
| Backlight units (BLUs) and components<br>for LCDs..... 103      | Indoor: recessed downlights ..... 70                      | Photonic crystal manufacturing equipment .. 61                 |
| Beacons, emergency directional aids ..... 110                   | Indoor: spotlights & pendant luminaires ..... 73          | Phototherapy lighting ..... 108                                |
| Billboards..... 99  | Indoor: under-cabinet lighting..... 74                    | Portable lighting (flashlights, lanterns etc) .. 86            |
| Bonding materials (epoxies, TIMs,<br>solders etc)..... 31       | Infrared LED chips ..... 16                               | Power LEDs - colored ..... 7                                   |
| Border/contour lighting ..... 90                                | In-ground luminaires ..... 94                             | Power LEDs - cool white ..... 8                                |
| Chip-on-board (COB) arrays ..... 19                             | Inspection lighting ..... 107                             | Power LEDs - neutral white ..... 9                             |
| Chip processing equipment..... 61                               | Insulated metal substrates ..... 32                       | Power LEDs - warm white ..... 10                               |
| Chip separation equipment..... 61                               | Large outdoor video displays..... 100                     | Railroad, marine, airport signals ..... 110                    |
| Color sensors & controllers..... 47                             | LED replacement lamps (fluorescent) ..... 77              | Refrigerated cabinet lighting ..... 88                         |
| Component distributors (LEDs, drivers,<br>modules etc) ..... 63 | LED replacement lamps (incandescent)..... 78              | Rental companies..... 102                                      |
| Connectors & cables ..... 58                                    | LEDs for camera flash..... 109                            | Retail display lighting..... 88                                |
| Contract manufacturing for LED<br>assemblies ..... 20           | LEDs for keypad/LCD backlighting..... 109                 | RGB packages..... 12   |
| Custom-designed drivers ..... 47                                | LEDs & modules for vehicle lighting..... 112              | Roadway marking & safety lighting ..... 111                    |
| Custom luminaire manufacturing..... 65                          | Lenses & other optical components ..... 32                | Semi-transparent displays ..... 102                            |
| Custom modules & prototyping ..... 20                           | Light engines..... 23                                     | Side-view LEDs..... 12   |
| Decorative & holiday lighting..... 92                           | Light guides ..... 34                                     | Software for optical design ..... 38                           |
| Design & integration services ..... 23                          | Lighting project design & consulting..... 81              | Software for thermal design..... 38                            |
| Digital lighting controllers ..... 50                           | Light sources for projection systems ..... 104            | Solar-powered & off-grid lighting..... 89                      |
| Driver ICs ..... 50   | Machine vision lighting ..... 107                         | Surface-mount LEDs (<0.5 W)..... 13                            |
| Drivers for LCD backlighting ..... 103                          | Marker lights, uplights ..... 94                          | Test & measurement equipment ..... 43                          |
| Drivers for mobile applications..... 108                        | Medical & dental lighting ..... 107                       | Thermal design & consulting..... 38                            |
| Drivers for vehicle lighting..... 112                           | Mobile LED screen trailers, frameworks..... 100           | Thermal heat sinks ..... 40                                    |
| Drivers & power supplies ..... 52                               | Modules for decorative lighting ..... 25                  | Thermal substrate materials ..... 40                           |
| Electronic design & consulting ..... 56                         | Modules for general lighting..... 26                      | Third-party testing services..... 43                           |
| Electronic loads..... 58  | Modules for signage backlighting ..... 102                | Through-hole LEDs ..... 13                                     |
| Emergency & security lighting ..... 66                          | Mounting systems ..... 58                                 | Traffic & pedestrian signals ..... 112                         |
| Encapsulants (silicones, epoxies),<br>dispensers ..... 31       | Moving head projectors..... 95                            | TV, film & stage lighting ..... 95                             |
| Epitaxial growth chemicals and gases ..... 61                   | Nitride (InGaN) blue, green LED chips..... 16             | Underwater luminaires ..... 96                                 |
| Epitaxial growth systems & software..... 61                     | OLEDs & EL light sources..... 110                         | UV and IR LEDs ..... 14  |
| Epitaxial wafers ..... 61                                       | Optical design & consulting..... 34                       | UV curing lights ..... 108                                     |
| Exit & emergency signs..... 99                                  | Optical films, diffusers, materials..... 36               | UV LED chips..... 17   |
| Fiber-coupled LEDs..... 7                                       | Optical materials & components ..... 104                  | Variable message signs..... 102                                |
|   | Outdoor: landscape luminaires..... 82                     | Vehicle lighting (headlamps,<br>tail lights etc) ..... 113     |
|   | Outdoor: streetlights, general area lighting.. 84         | Wafer characterization equipment ..... 61                      |
|   | Packaged multichip LED arrays ..... 28                    | Wafers & substrates (sapphire, SiC, GaAs,<br>AlN, ZnO)..... 61 |
|   | Packages & raw materials for packages ..... 36            | White LEDs (<0.5 W)..... 14                                    |
|   | Packaging & assembly - contract<br>manufacturing ..... 36 |  |

## Ad Index | LED SUPPLIERS DIRECTORY

|   |  |  |
|---|--|--|
| Aeon Lighting Technology Inc. .... 27           | GRE Alpha Electronics Ltd. .... 18                 | Osram Opto Semiconductors GmbH..... 67               |
| Allegro Microsystems Inc. .... 57               | Heraeus Materials Technology GmbH & Co. Kg... 41   | Philips Lumileds..... 2                              |
| American Bright Optoelectronics..... 17         | Hong Kong Trade Development Council..... 29        | Plasma-Therm, LLC ..... 60                           |
| Bayer Materialscience LLC..... 33               | Instrument Systems GmbH..... 42                    | Proto Labs Inc. .... 37                              |
| Beautiful Light Technology Corporation ..... 79 | Intertek ..... 45                                  | Recom Distribution & Logistics GmbH..... 49          |
| Carclo Technical Plastics (Mitcham) ..... 30    | Inventronics (Hangzhou) Co. Ltd. .... 53           | Riff Company Inc. .... 44                            |
| Color Stars ..... 83                            | Keystone Certifications Inc. .... 63               | Roal Electronics USA Inc. .... 46                    |
| Cookson Electronics ..... 59                    | Labsphere Inc. .... 44                             | Seoul Semiconductor..... C1                          |
| Cree Inc. .... C4                               | Lambda Research Corporation..... 39                | Sharp Electronics Europe GmbH ..... 87               |
| EBV Elektronik GmbH & Co. Kg ..... 101          | LED Linear GmbH..... 69                            | Shenzhen Bang-Bell Electronics Co. .... 111          |
| Edison Opto Corp. .... 21                       | Ledlink Optics Inc. .... 5                         | Shin Etsu Silicones of America Inc. .... 25          |
| Eptronics ..... 56                              | Lumoluce..... 48                                   | Signcomplex Ltd. .... 75                             |
| Evergreen International Corp. .... 106          | Lynk Labs ..... 6                                  | Sunonwealth Electric Machine Industry Co. Ltd. ... 1 |
| Everlight Electronics Co. Ltd. .... 11          | Matrix Lighting Limited, Hong Kong Office ..... C2 | Sylvania..... 97                                     |
| Frontand Technology..... 91                     | MBN GmbH..... 72                                   | The Korean Consulate General..... 4                  |
| Fusion Optix..... 32                            | Mean Well USA Inc. .... 55                         | Thomas Research Products ..... 51                    |
| Future Electronics Inc. .... 62                 | NU Horizons..... 15                                | Toshiba Electronics Europe ..... 64                  |
| Global Lighting Technologies..... 71            | ORB Optronix ..... 35                              | Underwriters Laboratories ..... 98                   |

# Face-to-Face with the World

**Feb. 7-9, 2012**  
**Strategies in Light.**  
Santa Clara Convention Center  
Santa Clara, CA USA  
[www.strategiesinlight.com](http://www.strategiesinlight.com)

*Record-breaking attendance 5 years running. 4,200+ attendees in 2011 – the largest to date. Sold-out exhibit floor in 2010 and 2011.*

**Sept. 18-20, 2012**  
**Strategies in Light. Europe**  
M.O.C. Event Center  
Munich, Germany  
[www.sileurope.com](http://www.sileurope.com)

*Second annual event with sell-out programs and exhibit floor in 2010 and 2011.*

*New international event involving both Chinese & foreign companies at all levels of supply chain.*

**May 22-24, 2012**  
**Strategies in Light. China**  
Shenzhen Intercontinental Hotel  
Shenzhen, China  
[www.sil-ledchina.com](http://www.sil-ledchina.com)

**July 31-Aug. 1, 2012**  
**THE LED SHOW™**  
Rio All Suite Hotel  
Las Vegas, NV USA  
[www.theledshow.com](http://www.theledshow.com)

*Our newest event focused on lighting design. 3,000 attendees and nearly 90 exhibitors.*

**Sept. 25-27, 2012**  
**LED JAPAN Conference & Expo Strategies in Light.**  
Pacifico Yokohama  
Yokohama, Japan  
[www.sil-ledjapan.com](http://www.sil-ledjapan.com)

*Record-breaking attendance with more than 5,000 attendees 3-years running.*

Meet face-to-face with thousands of the world's most influential and motivated manufacturers, equipment suppliers, and end-users who come to evaluate products and services and get the information they need to conduct business within the global LED and lighting industry.

Whether you are a supplier, an LED manufacturer trying to reach new customers, a designer looking for new product information, or a buyer exploring the latest technologies, our events can help achieve your objectives.

**For more information on exhibiting or sponsoring at ANY of our events, please contact:**

**United States (West Coast)**  
Tim Carli, Sales  
+1 650 946 3163  
[tcarli@strategies-u.com](mailto:tcarli@strategies-u.com)

**United States (East Coast)**  
Mary Donnelly, Sales  
+1 603 891 9398  
[maryd@pennwell.com](mailto:maryd@pennwell.com)

**Europe**  
Virginia Willis, Sales  
+44 0 1992 656 663  
[virginiaw@pennwell.com](mailto:virginiaw@pennwell.com)

**Austria/Germany/Switzerland**  
Holger Gerisch, Sales  
+49 0 8856 802 0228  
[holgerg@pennwell.com](mailto:holgerg@pennwell.com)

**Japan**  
Maiko Kobayashi, Sales  
+81 3 3219 3642  
[led@ics-inc.co.jp](mailto:led@ics-inc.co.jp)

**Hong Kong/Asia**  
Mark Mak, Sales  
+852 2838 6298  
[markm@actintl.com.hk](mailto:markm@actintl.com.hk)

**Mainland China**  
Michael Tsui, Sales  
+86 755 259 88571 x1009  
[michaelT@actintl.com.hk](mailto:michaelT@actintl.com.hk)

**Singapore/Taiwan**  
Michael Yee, Sales  
+65 9616 8080  
[yfye@singnet.com.sg](mailto:yfye@singnet.com.sg)

**Presented by:**

**Strategies Unlimited.**  
MARKET INTELLIGENCE  
PHOTONICS • LEDS • LIGHTING

**Supported by:**

**LEDs**  
MAGAZINE.

**PennWell®**

## CREE XLAMP® LIGHTING-CLASS LEDs

**XLAMP ML-B & ML-E LEDs**OPTIMIZED FOR  
SMOOTH-LOOK LIGHTINGLonger lifetime than backlighting LEDs  
(and the LM-80 data to prove it)Best color consistency with industry's  
smallest color bins**XLAMP XM-L HVW LEDs**OPTIMIZED FOR NON-DIRECTIONAL,  
COMPACT LIGHTINGHigh lumen output and high efficacy  
in a small footprint46V (typical) - Enable smaller, cooler  
and more efficient driver circuits that  
lower system cost**XLAMP CXA2011 LEDs**OPTIMIZED FOR  
NON-DIRECTIONAL LIGHTINGSimple assembly—no soldering  
or connectors requiredWide lumen output range—  
up to 3500 lumens at 45W, 85°C

# CREE XLAMP LEDs ARE APPLICATION OPTIMIZED FOR LOWEST SYSTEM COST

## REVOLUTIONARY!



Cree XLamp® Lighting-Class LEDs are purposefully designed to deliver the industry's best performance and optimized specifically for distinct applications.

Our revolutionary product portfolio enables you to design brighter, more efficient luminaires with fewer LEDs or simply use less LEDs and save space. So whether you're designing the next generation of indoor downlights or lights that emulate the look of fluorescent tubes, you can lower your system cost.

**Get samples of Cree XLamp LEDs or contact a Cree Solutions Provider at [cree.com](http://cree.com) or call us at 800.533.2583**

**Get Cree reference designs for non-directional applications at [cree.com/ref](http://cree.com/ref)**

**CREE**